DOCUMENT RESUME

ED 136 769 95 IR 004 554

AUTHOR	Jahoda, Gerald
TITLE	The Process of Answering Reference Questions. A Test of a Descriptive Model.
INSTITUTION	Florida State Univ., Tallahassee. School of Library Science.
SPONS AGENCY	Bureau of School Systems (DHEW/OE), Washington, D.C. Library Research and Demonstration Branch.
REPORT NO	475AH50028
PUB DATE	Jan 77
GRANT	G00-75-00619
NOTE	219p.; For related document, see ED 111 421
EDRS PRICE	MF-$0.83 HC-$11.37 Plus Postage.
DESCRIPTORS	*Instructional Materials; Learning Modules; Librarians; Libraries; *Library Reference Services; Library Research; Material Development; Models; Question Answer Interviews; *Questioning Techniques
IDENTIFIERS	*Query Negotiation

ABSTRACT

This study was conducted to determine how librarians answer reference queries, and to develop instructional materials for teaching the answering process. Twenty-three science and technology reference librarians used and commented on a six-step model of the search strategy process. The model was then revised to include the following steps: (1) message selection; (2) selection of types of answer-providing tools; (3) selection of specific answer-providing tools; (4) selection of search headings; (5) answer selection; and (6) negotiation and renegotiation. An instructional module was developed for each step consisting of description and practice exercises. The modules were tested in three graduate library school reference courses, and revised according to faculty and student comments. The author recommended the development of guidelines for choosing lead-in tool search sequence and specific answer-providing tools, and stressed the need for empirical research. The appendices include the instructional modules, a survey of public library reference queries, and a computer-searched and printed index to reference queries. (KP)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED136769

U.S. DEPARTMENT OF HEALTH.
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Final Report

Project no. 475AH50028
Grant no. G007500619

THE PROCESS OF ANSWERING REFERENCE QUESTIONS
A TEST OF A DESCRIPTIVE MODEL

Gerald Jahoda

School of Library Science
Florida State University
Tallahassee, Florida 32306

January 1977

The activity which is the subject of this report was supported in whole or in part by the U.S. Office of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the U.S. Office of Education, and no official endorsement by the U.S. Office of Education should be inferred.

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Office of Libraries and Learning Resources

IR004554

TABLES OF CONTENTS

Abstract

Preface

List of Tables

I. Description of the Problem 1

II. Objectives and scope of the study 2

III. Methodology and results 3

IV. Significant associated data 19

V. Conclusions 21

VI. Recommendations 22

Appendixes

A. The Reference Process. Modules for Instruction

B. Exercises to be Used with The Reference Process

C. The Reading of Tables, Graphs, and Charts

D. "The Way to Negotiate" Script for a videotape

E. A Survey of Reference Queries Answered in Public Libraries

F. A Computer-Searched and Printed Index to Reference Queries

G. Bibliographic Verification of Monographs

PREFACE

Work on this Project was done by the following master's and PhD students in the School of Library Science: Dr. Judith Braunagel, Janice Fennell, Dr. Nice Figueiredo, Sims Kline, Miguel Menendez, Herbert Nath, William Needham, Afarin Shahravan, Lee Shiflett, and Vicki West.

An advisory committee consisting of Dr. Ronald Blazek, Dean Harold Goldstein, and Dr. Martha Jane Zachert of the School of Library Science and Mrs. Lois Burdick of the Strozier Library assisted in the planning of the Project.

The work of both groups is gratefully acknowledged.

Gerald Jahoda
School of Library Science
Florida State University
January, 1977

LIST OF TABLES

Table no. Page no.

1. Instrument for Search Strategy Development . . . 4
2. Model of the Reference Process 5
3. List of Descriptors and Modifiers 9
4. Tool-Descriptor Matrix 12
5. Types of Answer-Providing Tools 13
6. Clues for Identifying Queries to be Negotiated . 16
7. Good and Poor Ways to Negotiate 18

I. Description of the Problem

Reference work in libraries is centered around the assumption that any individual can come to any public library in the United States and pose any queries that s/he wants answered. It is centered around the further assumption that the reference librarian will try to answer all of the queries presented, with the exception of certain medical or legal queries. Reference work is also performed in academic, school, and special libraries, though for a more limited clientele. It is taught in all library schools, typically as one or more required courses. It is also taught on the job. Librarians teach reference work techniques to clerks, subprofessionals, and to some extent to newly graduated library school students. Different methods are used for presenting reference procedures and principles, but none of these methods makes any attempt to simulate the actual step-by-step technique used by the reference librarian for answering reference queries - namely, what the reference librarian does.

The problem to be studied can thus be described as (1) the determination of how reference librarians answer queries, and, once this determination has been made (2) the development of instructional material based on how reference work is performed by experienced professionals.

II. Objectives and scope of the study

The objectives of the study, based on the problem identified, are twofold:

1. To determine how reference librarians answer reference queries.
2. To develop instructional material for teaching the answering of reference queries and to do so based on how this task is performed by reference librarians.

For the first objective, the work of the reference librarians is studied. For the second, instructional material is developed and tested on students in library schools.

III. Methodology and results

Test of Descriptive Model by Reference Librarians

A review of the literature on the reference process yielded a descriptive model of the process represented as a series of decision-making steps.[1] Since this was a hypothetical and untested model based on the synthesis of several models reported in the literature (none of which was tested individually) a decision was made to test components of this model of the reference process by asking reference librarians to use them in answering reference queries.

The steps tested were:

1. Query negotiation (when applicable)
2. Message selection
3. Determination of level of answer required (when applicable)
4. Types and sequence of answer-providing tools to search
5. Type of answer to provide
6. Type or types of access points to use

For this test of the descriptive model, reference librarians in 23 science and technology libraries of academic institutions were asked to submit records of answered queries. Four hundred thirty-five queries were collected in this way. These queries were used to test the search strategy development steps of the descriptive model as listed above. This was done by translating the search strategy development steps of the reference process into a series of questions. These questions were used as the instrument for testing the model. A copy of the instrument is reproduced as Table 1. Twenty-three science and technology reference librarians, most of whom had participated in the query collection phase of the study, were asked to use the instrument for search strategy development for 20 queries (other than the queries they submitted). They were then asked to comment on how accurately the model, as represented by the instrument, reflects their technique of performing the search strategy development. While 17 out of 23 commented that the model represents an approximation of search strategy development or gave a qualified assent, 6 indicated that the model was not an adequate representation of how they performed this phase of the reference process, or did not answer the question.

Reference librarians who disagreed in part or entirely were asked to suggest changes in the model to make it a more accurate reflection of how search strategy is developed. These comments along with additional testing of the model by the project staff led to a revision of the model. The revised model is given as Table 2.

---

[1] Jahoda, G. and Olson, P.E. Models of Reference. Analyzing the Reference Process. RQ 12:148-60 (1972).

TABLE 1

Instrument for Search Strategy Development

Question number ____

1. For questions that were negotiated, what questions would you ask to get from question statement as originally submitted to question statement as finally answered? (Please use back of form if more space is required).

____

____

2. Indexable information. Select the message carrying words or phrases that you need to develop the search strategy.

____

____

3. Level of answer to be provided. Would patrons with different educational backgrounds be provided with different answers to this question?

Yes, elementary level _____; Yes, advanced level _____; No _____; Can't tell _____

4. Types and sequence of references to search. Please mark a "1" next to the type of tool that you would use first, a "2" next to the type of tool that you would use second, etc. Assume that the answer may not be in the first type of tool selected and mark as many types of tools as are applicable.

___a. Abstract and index journals
___b. Biographical sources
___c. Book review indexes
___d. Card catalog (local)
___e. Catalogs of other libraries
___f. Dictionaries
___g. Directories (other than biogra.)
___h. Encyclopedias or compendia
___i. Geographical sources
___j. Guides to the literature
___k. Handbooks (incl. manuals, almanacs)
___l. National & trade bibliographies
___m. Review journals
___n. Texts and monographs
___o. Union catalogs and lists
___p. Yearbooks
___q. Other, please specify ______________________

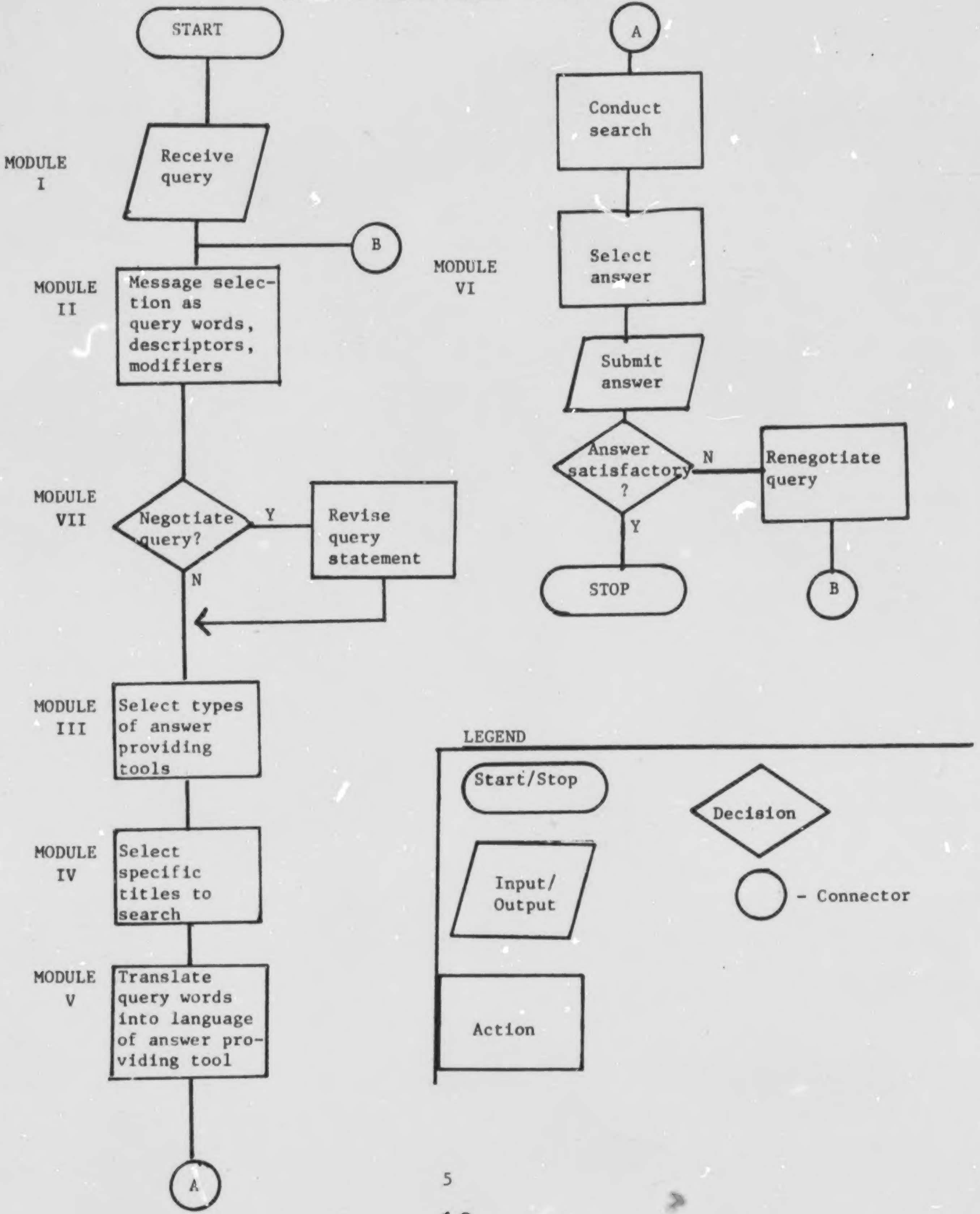
5. Type of answer that you would provide (assume that you would provide patron information and/or document(s) containing information.

___a. One or more documents
___b. An extract of a document
___c. One or more bibliographic citations
___d. A picture
___e. One number (with or without qualifications)
___f. A series of numbers (with or without qualifications)
___g. Name (s)(person, organization) with or without address
___h. Date(s)
___i. Place name(s)
___j. Recommendation(s)
___k. Other, please specify

6. Type(s) of access point to search - Author ____Subject ____ Title ____
Other (please specify) ____________

TABLE 2

Model of the Reference Process


START
MODULE I
Receive query
B
MODULE II
Message selection as query words, descriptors, modifiers
MODULE VII
Negotiate query?
Y
Revise query statement
N
MODULE III
Select types of answer providing tools
MODULE IV
Select specific titles to search
MODULE V
Translate query words into language of answer providing tool
A
A
MODULE VI
Conduct search
Select answer
Submit answer
Answer satisfactory ?
N
Renegotiate query
Y
STOP
B
LEGEND
Start/Stop
Decision
Input/Output
- Connector
Action

This includes all of the decision-making steps in the process, not only the search strategy development steps. The steps preceding the search of the literature and the provision of the answer are included in the revised model. Other changes in the model are:

1. The message selection of the query conducted prior to query negotiation. The results of this step are used to determine missing or ambiguous elements of the query. This initial step is thus related to query negotiation.
2. The addition of a step for selecting specific answer-providing tools once a type or types of answer-providing tool has been determined. This is particularly important for the library school student and the beginning reference librarian who are likely to have a limited knowledge of reference collections.
3. The addition of a search heading selection step, a step in which the message words are translated into the access points of the answer-providing tools. In this step, the type of access point to be used is included.
4. The addition of an answer selection step, a step that now includes the type and size of answer selection.
5. The level of answer selection step omitted as a separate step but included with the negotiation step (when that information is not given) or with the type of answer-providing tool when that information is applicable.

One other change was made at this time in addition to the modification and the expansion of the model. A decision was made to develop instructional material for a general reference course rather than a science and technology reference course. The primary reason for doing so was that the instructional material would be most appropriate for library school students during their initial exposure to reference work. This is likely to be in an introductory course on general rather than specialized reference work. Once the process has been taught in the initial, general reference course, it can then also be applied to the reference courses that follow.

Development of the Instructional Material

In this section of the report the development of instructional modules for carrying out the decision-making steps in the reference process as depicted in Table 2 will be described. The decision-making steps covered in the instructional modules are:

1. Message selection
2. Selection of types of answer-providing tools
3. Selection of specific answer-providing tool
4. Selection of search headings in answer-providing tool
5. Selection of answer
6. Negotiation and renegotiation

The modules will be described in this sequence, which is the sequence used in the instructional material. The negotiation-renegotiation step is covered last and out of sequence as far as the actual reference process is concerned. The reason for changing the sequence of steps is that it was believed that students should be exposed first to queries that do not require negotiation before the more difficult negotiation topic is introduced.

For each of the decision-making steps, we asked ourselves how the reference librarian performs this step and for each step the answer was that we do not really know, since the path followed for coming up with the desired output, the answer to the query, has not as yet been traced. Instead, we looked at the desired output for each step, and for guidelines to follow for performing the step correctly. For example, in the message selection step the output consists of single words or phrases that represent the content of the query. Reference librarians do not have explicitly stated procedures for getting from the query statement to the query message. A desirable outcome of this step is that the message of the query should be an accurate representation of the original query statement with all extraneous words removed. Each of the six decision-making steps will be discussed in terms of the desired output of each step, the procedure used in developing the instructional material with reference to such material which is attached as Appendixes A and B, the comments, if any, by students and instructors who used the modules, and the revision of instructional material either undertaken or suggested.

Before describing the instructional modules in this way, a few words need to be said about the test of the material. The material was tested in three introductory reference courses in three graduate library schools at Central North Carolina University, the State University of New York at Buffalo, and Florida State University. After a preliminary test of the material at Florida State University in the 1975 fall term, suggested procedures for using the materials were prepared. These suggested procedures for using this material were sent to the three instructors at the above-named universities. The suggestions included the coverage of this material in seven 50-minute class sessions or the equivalent amount of time if longer class sessions are used, the use of class time for introducing the students to the exercises, and also the discussion of the exercises in class after these exercises have been performed out of class. The instructors were asked to obtain student comment on the instructional material and also to add their own comments. The revisions of the instructional material are based to a large extent on student and instructor feedback.

Each of the decision-making steps in the decision-making process is to be taught with the aid of an instructional module consisting of the description of the step and exercises for practice in the performance of the step. The development of the individual instructional modules will be discussed below.

Development of the Modules

Module 1. Selection of message in the query. Desired output: characterization of query message as specific query words and as generic concepts.

The query submitted in person, over the phone, or in the mail consists of a set of words addressed to the reference librarian. This set of words is called the query statement. The first step in the reference process is to identify a subset of words that represents the message of the query. There are different ways of accomplishing this. One way used in a similar operation, the selection of the message words from a title of a document, is to use all words other than those listed on a delete (do not use) words list. This is the well-known technique for preparing keyword from title indexes by computer. The use of this technique was rejected since it was considered desirable not only to separate delete words but also to group message words in one step. We turned to another technique for our purpose. The technique was developed by Calvin Mooers and makes use of a small number of indexing terms called descriptors. The descriptors are grouped under about ten headings.[2] The list might consist of fewer than 100 descriptors and be headed with questions such as "Does the document deal with equipment?" or "Are properties of substances discussed?" Under each of these question headings, the appropriate descriptors are listed. Selection of indexable information is done by asking oneself each of the question headings of the list of descriptors and, if the answer is yes, selecting as many descriptors as apply. In this way, the indexer would review all potentially applicable descriptors and thus avoid or at least reduce the chance of missing an appropriate descriptor. For message selection from reference queries only three categories are used: known descriptors, wanted descriptors and modifiers. Upon examination of about 700 reference queries (435 science and technology queries and 300 general reference queries collected from public libraries) we concluded that each query consists of at least two types of message words: words that identify what is known (or given) about a query and words that identify what is needed or wanted. For example, in the query "Who is the Secretary of Agriculture in the U.S.?" "Secretary of Agriculture" is the known term and "Who is" is the wanted term. The known or wanted terms are frequently qualified or modified. In the sample query, "in the U.S." is a modifier of the known term. After we had specified that message words could be grouped into known terms, wanted terms and modifiers, we attempted to develop a small list of indexing terms that would characterize message terms generically. These terms are called known descriptors, wanted descriptors, and modifiers. The descriptors and modifiers were difficult to develop and required about a dozen "passes" through a list of 700-plus reference queries before we were reasonably satisfied with their definitions and consistency of use. The list of descriptors used in the last test of the system is given in Table 3. Definitions of the descriptors and instructions for use are given on pages 14-20 of the manual (Appendix A). Chapter Two of the manual covers the message selection process with the aid of descriptors and modifiers. Corresponding exercises (Appendix B) give students practice in selecting message words as well as in translating these message words into known descriptors, wanted descriptors, and modifiers.

---

[2] Mooers, Calvin N. Zatocoding and Developments in Information Retrieval. Aslib. Proc. 8:3-22 (Feb. 1956).

TABLE 3

List of Descriptors and Modifiers

WANTEDS (TYPES OF EXPECTED ANSWERS)

1. Dates (specific dates)
2. Events (involving people)
3. Illustrations

4. Numeric information
    a. properties (scientifically measured)
    b. statistics (involves counting) and other
5. Organizations
6. Persons
7. Addresses and general locations
8. Publications
    a. citations (including bibliographies)
    b. document locations
    d. verification or completion of bibliographic data
9. Terms or subjects
    a. abbreviations
    b. words, phrases, definitions
    c. abstracts, annotations, recommendation of publications
    d. general or background information
10. Unspecified or other (list particular wanted)

KNOWNS (TYPES OF ACCESS POINTS)

12. Abbreviations
13. Dates (specific dates)
14. Events (involving people)
15. Illustrations

16. Organizations (specifically named; includes corporate authors)
17. Persons (specifically named; includes authors)
18. Places
19. Terms or subjects (other than specific types already listed)
20. Titles of publications (specifically names)
21. Unspecified or other (list particular known)

TYPES OF MODIFIERS

22. Academic discipline
23. Amount of expected information
24. Foreign language
25. Level of information
26. Place
27. Time period
28. Type of publication

FOR EACH APPLICABLE TYPE OF MODIFIER SELECT ONE OF THE FOLLOWING QUALIFIERS:

a. Applicable and stated in query (list the particular modifier)
b. Applicable but not stated in query (reason for negotiation)

Students appeared to have had no difficulty in identifying message words and phrases from the query statement. The characterization of a query in terms of what is wanted and what is known (given) seemed to have provided a useful framework for the message selection step. There were several problems in the translation of the message words and phrases into wanted descriptors, known descriptors, and modifiers. Inconsistent use of several descriptors, specifically 2. Events and 9d. General or background information, 8a. Publication citations, 8b. Publications location and 8d. publications verification suggests the need for additional examples of use of these descriptors, and revised definitions of descriptors. Some queries are condensed versions of two or more separate queries. For example, the query "How old was the Chief Justice of the U.S. Supreme Court in 1976?" requires first the identification of the Chief Justice, the first query, and then the determination of his age. In the system described, such queries need to be translated into two or more queries and this needs to be included in the description of this step. Only a framework for the modifiers is given in the manual.

Preliminary use of the modifiers suggests that this component of the system may not be needed. Initially, modifiers were intended to aid in the identification of queries that required negotiation and in the selection of specific answer-providing tools. A list of questions for identifying queries to be negotiated has been established instead of the modifiers. Preliminary work on using modifiers as aids in the selection of specific answer-providing tools led to the conclusion that the necessary list of modifiers would be too lengthy and difficult to use to be of value in the selection of specific answer-providing tools.

Module 2: Selection of types of answer-providing tools. Desired output: one or more types of answer-providing tools, as for example dictionaries or handbooks, that are likely to contain an answer to a given query.

Development of instructional modules

The initial step was the development of a list of types of answer-providing tools. This list was first developed for science and technology queries and then expanded and modified for general reference work. Next, a procedure was developed for selecting the type or types of answer-providing tools for a given query. While we have no direct evidence of how this step is performed by experienced reference librarians, we assumed that the librarian attempts to match the message of the query against the content of types of answer-providing tools. The type or types of answer-providing tools that match the closest are selected for that particular query. Attempts were made to make this matching operation explicit. This was done by using the list of wanted and known descriptors developed for indexing the query and using these descriptors for indexing the contents of types of answer-providing tools. The procedure for indexing the contents of types of answer-providing tools differed in one major way from the indexing of the query message. While the query message was indexed by one and only one wanted descriptor and one and only one known descriptor, no such restriction was imposed on the indexing of types of answer-providing tools. It should be pointed out that the indexing of types of answer-providing tools is not based on the contents of a single title, e.g., a specific edition of the Encyclopedia Britannica, but on the type of information expected in all general encyclopedias. Once a list of wanted and known descriptors was obtained for each type of answer-providing tool, a matrix of wanted and known descriptors was prepared. In this matrix each cell made by the lines intersecting a specific combination of a known descriptor and a wanted descriptor contains one-letter codes identifying the type or types of tools that are indexed by this combination of descriptors. Thus, once the student has selected the query message and translated it into a combination of wanted and known descriptors, s/he could go to the matrix given as Table 4 to select the type or types of answer-providing tools that are likely to contain the answer to the query. The letters in the wanted and known descriptor cells stand for the types of answer-providing tools, identified in Table 5.

While the idea of a matrix for selecting types of answer-providing tools has merit, there are some problems with the implementation of this idea, problems that were brought out in the test use of this module. The procedure is mechanical once the descriptors for a given query have been selected. Unfortunately, the mechanical selection of types of answer-providing tools did not always yield potentially useful types of tools. When more than one answer-providing tool may be used, search sequence is not indicated. At first, attempts were made to label certain types of answer-providing tools for some combinations of descriptors as primary (tools to be used first) tools while others were labeled as backup tools. Since the rationale for this procedure could not be made explicit, this approach was abandoned. This problem did, however, identify our inability to specify search sequence, and a small start in the direction of solving this is given under associated data.

Module 3: Selection of specific answer-providing tools. Desired output of step: one or more reference tools that are likely to contain answers to the query.

In this module the type or types of answer-providing tools determined in the previous module are translated into the specific title or titles of answer-providing tools. Since reference librarians are not likely to be familiar with all potentially relevant answer-providing tools, memory aids or ways for identifying specific tools need to be provided. These are the lead-in tools that enable the librarian to go from a type of tool, say, a dictionary, to a specific dictionary that is likely to contain the answer to the query. Three types of lead-in tools, the card catalog, guides to the literature, and bibliographies of specific type of reference tools are discussed and ways of using these lead-in tools are illustrated. These are standard reference tools used by librarians and no new methods for covering this material had to be developed.

Students had no critical comments on the material covered in this instructional module, the descriptions of lead-in tools,

TABLE 4
Tool-Descriptor Matrix

WANTEDS	Dates	Events	Illustrations	Properties	Statistics	Organizations	Persons	Addresses, locations	Citations	Document locations	Verification of publications	Abbreviations	Words, phrases, definitions	Abstracts, annotations, recommendations of publications	General information	Unspecified or other	
KNOWNS	1.	2.	3.	4a.	4b.	5.	6.	7.	8a.	8b.	8d.	9a.	9b.	9c.	9d.	10.	
12. Abbreviations						D							D				12.
13. Dates		HM Y				Y	Y		I		I		Y	I	HM Y		13.
14. Events	EH M		AE MY		EHM Y	EM	EH MY	EH MY	CI				EH MY	I	EM P		14.
15. Illustrations				H	H								H		H		15.
16. Organizations	EH M	EN Y	E MP		NE	N	EMN	EG HN	CI	C	CI	D N		GI	EH NP		16.
17. Persons	BDE H	BD EH	BE MY	BE HY	BE HY	BE	BEM	AB EM	BC I	C	CI		BD E	GI	BE M PY		17.
18. Places	EHM	EH MY	AE HM	AD EH	AD EH	N	AE	AD EH	CI	C		D	D	I	AE HM		18.
19. Terms or subjects	DE HM	EM	AD EHM	DE H	EH NY	N	BE Y	E	CG I	C	CI	DE	DE H	GI	EH M		19.
20. Titles					I N P				CG I	C	CI P	I		GI N P	EG IP		20.
21. Unspecified																	21.
	1.	2.	3.	4a.	4b.	5.	6.	7.	8a.	8b.	8d.	9a.	9b.	9c.	9d.	10.	

TABLE 5

Types of Answer-Providing Tools

A *	Atlases, Maps
B	Biographical sources
C	Card catalogs, union lists
D	Dictionaries
E	Encyclopedias
G	Guides to the literature
H	Handbooks, manuals, and almanacs
I	Indexes, bibliographies, and abstracts
M	Monographs, texts
N	Non-biographical directories
P	Primary publications. This includes dissertations, reports, primary journals and conference proceedings.
Y	Yearbooks

* Letter code used for characterizing type of answer-providing tool in Table 4

suggestions of how these tools are used and practice in the use of these tools. In describing the lead-in tools, the possibility of different search sequences for identifying specific answer-providing tools was discussed but no generalizations could be made as to when the search should be started with the card catalog, a guide to the literature, or a bibliography of type of reference tool. This problem is similar to that identified in the previous step when there is a choice of two or more types of answer-providing tools to use. Here again, work needs to be done to identify generalizations that can be used for specifying the least time-consuming search sequence.

Module 4: Selection of search headings. Desired output: one or more access points for searching the specific answer-providing tool(s).

In this module the message words in the query are translated into the index language of the specific answer-providing tool(s) to be searched. This is a problem encountered in index preparation and index searching. The instructional module for this step also utilizes techniques developed in the field of indexing, translating the indexable information into the language of the index. The conversion of message words into access points in indexes may require the use of synonyms, more general, more specific, or otherwise related terms. Subject authority lists for the index have to be used when available, or related terms have to be developed by the searcher when the index lacks a syndetic network. Extracts of subject authority lists were used to illustrate the process of locating resulting terms.

One problem pointed out in the test use of this material is the difficulty of providing examples with which all students are familiar; for example, in the exercises, some students had difficulty locating related terms from a list of home economics terms because they were not all familiar with this field. Thus the examples in the exercises need to be revised so that students do not miss the point in the exercise because they are unfamiliar with the field of knowledge. Another suggested revision is the expansion of the coverage of different types of indexes, particularly on-line searched coordinate indexes, since students are likely to encounter that type of index in their work. A further suggestion is that in addition to using single-page excerpts of subject authority lists, exercises which provide practice in the use of actual subject authority lists should be developed.

Module 5: Answer selection. Desired output: the fact, passage of text or entire text along with the citation of the answer-providing tool or tools.

The answer should be correct and complete. Completeness here refers not to citing all the documents on a particular topic but giving the complete answer for each document cited. Typically, that is the fact, portion of text, or entire text with its full bibliographic citation. There seem to be no standard methods used by reference librarians to select answers from an answer-providing tool.

To prepare this instructional module, over 700 reference queries were examined to determine what type of difficulty might be encountered by a beginning reference student in selecting an answer. Two problems were identified. One was that in which numbers had to be selected as answers and the numbers had to be qualified. For example, the average temperature for a given location should have a number qualified by the measuring scale, plus as many other qualifications as are given in the reference tool: e.g., the month, the time of day, where the temperature is measured. The second problem is related to the provision of a complete bibliographic citation for the lead-in tool and/or the answer-providing tool. The materials for the manual and the exercises were thus prepared to cover these two aspects of answer selection.

The test of the instructional material suggested that students have difficulties in selecting answers from tables, charts, and graphs. A description of how to do this was therefore prepared and is given as Appendix C.

Module 6: Query negotiation and renegotiation. Desired output: identifying the real query and eliminating query ambiguity.

It is essential for the reference librarian to answer the correct (real) query. Unless this is done and done correctly the reference librarian is not doing his or her job. S/He thus needs to recognize queries that are ambiguous. In a number of instances, insufficient information about the query is given to obtain the answer. The process of getting to the real query and having sufficient information about it to be able to answer it is the task performed in the negotiation step. The answer to a query may not be satisfactory to the client and when the query is to be reformulated as a result of negative response to the initial query, then renegotiation takes place. Negotiation or renegotiation does not occur for all queries but is an essential step in the reference process for queries that require modification or amplification. As with the other decision making steps, there is little known of how reference librarians negotiate. The output of this step is a query statement reflecting the client's real information need and expressed in sufficient detail for the librarian to answer. There are guidelines for query negotiation that have appeared in the recent library literature and these have been incorporated and cited in the instructional material.

The instructional material for identifying queries to be negotiated is based on missing elements in a query, such as geographic, date, type of publication. When these missing elements in a query were first assembled, an attempt was made to relate them to the modifiers used in conjunction with known and wanted descriptors. This turned out not to be useful since not all modifiers were useful negotiation elements and vice versa. The list of clues that are now used in identifying queries to be negotiated is given as Table 6. An exercise has been prepared for selecting queries to be negotiated and for indicating reasons for negotiation.

Negotiation entails not only asking the right questions but also asking them in the right way. This point is developed in the

TABLE 6

Clues for Identifying Queries to be Negotiated

1. Is this the real query?
2. Is the subject of the query recognized?
3. Is the query statement unambiguous and complete?
4. Is the amount of information wanted specified?
5. Is the desired level of answer specified?
6. Is the query answerable in time available to librarian?
7. Is the query answerable in the literature?
8. If there are potential constraints of language, time period, geography, or type of publication, are these constraints given?

instructional material on query negotiation and a list of good and poor ways of negotiation is given as Table 7. Learning negotiation is perhaps best done by watching and doing and this thought was used in developing the instructional material for this step in the reference process. A script was prepared that illustrates both good and poor negotiation technique as outlined in the list given as Table 7. The script given as Appendix D was used for making a videotape in which the students from the University's School of Theater were used as actors. Students in the introductory reference courses view the videotape and discuss it in class. They are then given a negotiation exercise. Students do this assignment in pairs with one student being the reference librarian and the other student being the client. This role is then reversed to give each student a chance to play both parts. The simulated client writes the real query on a piece of paper and presents a query to be negotiated into the real query to the simulated reference librarian. The negotiation procedure is recorded on audiotape and turned in to the instructor along with the written statements of the real query. The instructor critiques the negotiation procedure with the aid of the list of good and poor negotiation points (Table 7). Student comment on this module was typically favorable. This may be because it is fun to negotiate and/or because it brings out the ham in each of us. There was demand from students to have more negotiation exercises and/or to videotape the students' negotiation session. The latter suggestion should be investigated should the logistics of videotape use be worked out.

TABLE 7

Good and Poor Ways to Negotiate

Good Negotiation

____ Librarian uses open questions in the initial stages of negotiation

____ Encourages patron to discuss his information needs

____ Summarizes or paraphrases the patron's query to insure mutual understanding

____ Makes eye contact with patron

____ Gives patron full attention

____ Remains objective about the content of the query

____ Attempts to make patron feel at ease

____ Follows the patron's train of thought

____ Shows empathy for the patron

____ Is aware of nonverbal clues

Poor Negotiation

____ Librarian interrupts patron as he attempts to discuss his information needs

____ Uses closed questions too early in the interview

____ Doesn't give patron full attention

____ Reacts subjectively to the content of the query

____ Is too quick to state that the query cannot be answered

____ Provides an answer to the query prematurely without thorough consideration

____ Places patron on the defensive

____ Exhibits uneasiness in working with patrons

IV. Significant associated data

Associated data discussed here relate to two different aspects of the work, the development of supplementary material to provide practice in answering reference queries and preliminary work on the development of generalizations about ways in which a step in the decision making process is to be performed.

The development of supplementary instructional material will be discussed first. It is suggested that after students have been acquainted with and given practice in the performance of the individual decision making steps in the reference process, test queries be given to them so that they can have the opportunity to perform the entire process. To do this, a number of reference queries along with answers to these queries need to be provided. To make this practice as realistic as possible, a decision was made to collect actually answered reference queries in public libraries. A total of 1658 queries were collected in 1976 from 27 public libraries. These queries are potentially useful for assignments to students after lead-in tools, answer-providing tools, access points and answers have been checked. A report of the survey of queries collected from public libraries, as well as a grouping of queries by combination of wanted and known descriptors, is given as Appendix F. The individual instructor of reference courses is faced with the problem of collecting reference queries for his course. This is a continuing task since the same queries cannot or at least should not be used in a particular year after year course. This is partly because the reference tool containing the answer is likely to fall open on the page containing the answer, often obligingly marked by the students. A computer-based index to reference queries was developed. This technique makes use of a data management system and enables the teacher to select queries that have certain characteristics. For example, the index permits the selection of queries that are to be answered with specified types of tools, and which are to use a specified type of access point. A manuscript describing the index to queries, along with a suggestion to use the index as a basis for developing a query bank that can be shared by a number of teachers, is given as Appendix G.

In the course of developing instructional material for the selection of specific types of answer-providing tools, we became aware of the absence of criteria used in selecting the search sequence when alternate types of answer-providing tools might be used. For example, if an answer to a query for background information on a subject can be answered in either an encyclopedia, a handbook, or a text, what search sequence should be used? This led to a small test for determining factors that may influence search sequence. The verification of monographs was used as the type of query for this work because it is encountered not only by reference librarians as a reference query but also by acquisitions librarians, catalogers, and inter-library loan librarians in monograph verification for purchasing, cataloging, borrowing or lending. Records of completed inter-library loan requests in the Florida State University Library were examined to determine what possible errors of omission and commission could occur in such requests. Based on these findings, a flowchart for verifying monograph citations with varying amounts of missing and/or incorrect information was prepared. The description of this work is given as Appendix H.

V. Conclusions

Work on this project has resulted in the development of a framework for teaching the reference process. The framework development, with the aid of a test of a descriptive model of the reference process by reference librarians, consists of the following six decision-making steps:

1. Message selection
2. Selection of type or types of answer-providing tools
3. Selection of specific answer-providing tools
4. Selection of search headings
5. Selection of answers
6. Query negotiation and renegotiation

Instructional modules were prepared for each of the decision making items with each instructional module consisting of an essay giving the reason for the step, ways of performing the step, and, when available, generalizations about the step, as well as exercises in performing it. Reference queries answered in libraries were collected for practice use by students after they had been exposed to the individual decision-making steps of the reference process. An index to queries in machinable form was prepared to enable instructors to select practice queries with desired characteristics. The instructional material was tested with students in three introductory reference courses. While student and instructor feedback indicates that this approach to teaching reference work is useful, revision and expansion of the material are needed. One such revision has already been made: the expansion of the answer selection module by including a section on the reading of tables, charts, and graphs. Other desirable revisions are the refinement of the list of descriptors, the discussion of coordinate indexes in the selection of search heading modules in view of the students' likely future use of on-line searched bibliographic data bases, and the refinement of the types of answer-providing tool module by incorporating suggested search sequence when answers might be located in more than one type of tool. The latter revision will be the most difficult to accomplish since it will require the identification of generalizations about criteria for selecting different types of answer-providing tools.

VI. Recommendations

When we developed the instructional material for the selection of types of answer-providing tools as well as specific titles to search, we became aware of the fact that there are few guidelines to assist the librarians in selecting, say, an encyclopedia or a handbook or a text for general background on a subject query, few guidelines for choosing the lead-in tool search sequence among card catalogs, guides to the literature, or bibliographies of type of reference tool, and few guidelines for the selection of specific answer-providing tools. In short, this part of the search strategy is mostly empirically rather than theoretically based. Basic work on search sequence is therefore recommended. A small start was made in this project by identifying possible errors of omission and commission in monograph verification and the preparation of a flowchart for searching incomplete and/or incorrect monograph citations. A similar procedure for other types of reference queries is recommended to help the field move from an empirical to a theoretical basis.

Other recommended work is the expansion and refinement of the instructional modules to facilitate their use by both students and instructors. The expansion of the instructional material into a text is suggested and this suggestion is now being developed.

Appendix A

THE REFERENCE PROCESS

Modules for Instruction

Gerald Jahoda
and
Associates

School of Library Science

Florida State University

January, 1976

Prepared under U.S. Office of Education grant #OEG-0-74-7307

ACKNOWLEDGEMENT

This text and the exercises to be used with it were prepared with the assistance of a grant from the U.S. Office of Education. This is a preliminary edition of the text to be used only for testing the instructional material developed in the course of this project. The text and exercises were prepared with the assistance of Dr. Judith Braunagel, Herbert Nath, Sims Kline, Dr. Nice Figueiredo, Lee Shiflett, and Miguel Menendez.

Gerald Jahoda
School of Library Science
Tallahassee, Florida

January, 1976

TABLE OF CONTENTS

I. Introduction..1

II. Message Selection 10

III. Selection of types of answer-providing tools 21

IV. Selection of specific answer-providing tools with the aid of lead-in tools 36

V. Selection of search headings 41

VI. Answer selection 45

VII. Query negotiation 48

LIST OF FIGURES AND TABLES

Model of Reference Process 7

Checklist of Wanteds, Knowns and Modifiers 12

Types of Answer-Providing Tools 22

Tool-Descriptor Matrix 25

Checklist for Identification of Negotiable Queries 51

Checklist for Evaluating Negotiation 64

I. INTRODUCTION

A. Definition, objectives of reference work and why of importance in libraries

When a librarian answers queries for the address of a particular organization, for the verification of a bibliographic citation, or for help in using the card catalog, he is performing reference work. More generally, any query by patrons which might be answered with documents in the library, with documents in other libraries, or with knowledge in someone's head (including the librarian's), can be called reference work. The objectives of such work characterized in terms of how well it should be done, are to:

* answer queries correctly;

* answer queries at the lowest cost;

* answer queries as quickly as possible.

A few comments about these objectives are in order. Answering the query correctly is probably self-evident, something that we all agree should be done. It implies, however, that the right query is answered, something that is not always done as we shall see later. It also implies that if we say there is no answer to a query (which may be the correct answer) we need to be able to document (prove) this. Answering queries at the lowest cost is something that we owe to the agency that provides us with financial support, whether it be a school, a university, or a community. We need to make the best use of our resources and that, of course, includes personnel. In different types of libraries the distribution of cost between library staff and patron may differ. If the answering of the query can be delegated to a sub-professional or clerk, this should probably be done. Answering the query as quickly as possible can also be argued for at least one reason. Most persons coming to the library with a query want to have it answered right then and there. If there is too much delay, or worse, if the query is answered incorrectly, the patron is less likely to come back when he has another information need that the library may answer.

Let us now look at why reference work is of importance in libraries, why it may even be considered as one of the most important services libraries provide. To the public, the reference desk, with the possible exception of the circulation desk, is the most visible part of the library. The library patrons' impression of the library may be strongly shaped by what they think of the library's reference services. Patrons should know that the reference librarian is here to answer (or at least to try to answer) any and all queries that they may have, queries that can be answered not only with the resources of the local library but also with the aid of resources in all libraries and information centers. There are other reasons why reference work is important in libraries. It provides library management with a view of (at least some of) the information needs of patrons. An examination of the use of reference service is of value in the planning and evaluation of other library services and operations, including acquisition, circulation, and cataloging.

B. Variables

Before we examine how reference work is performed, let us discuss some of the different ways queries can be grouped. Some of these different ways or variables are:

(1) Leading the patron toward the answer versus providing the answer
(2) Types of answers
(3) Size of answer
(4) Queries of recall versus discovery
(5) Types of tools used in answering queries
(6) Training requirements of person answering the query

Let us now look at some of these variables:

1. Leading the patron toward the answer versus providing the answer

The decision to provide a lead toward the answer, e.g. asking the patron to check the catalog for books on the subject, rather than providing the answer, may be caused by the library's clientele, by the (limited) funds available for reference services, or by a combination of these two factors. In school and academic libraries, instructors would frown on librarians if they were to provide answers to assignments. Instead, the librarian instructs the students in the use of the reference tools and leads them to the appropriate tools. It is the students' task to select the answer to their query. This is also done in other types of libraries, typically not by choice but because of budgetary restrictions. In our discussion of reference work we will assume that the reference query is answered to completion. The patron will be provided either with the answer as in a query for numeric information or with the document(s) containing the answer as in a query for background information on a subject. We are taking this "answer to completion" approach not because it is the policy of most libraries but because it is our belief that by learning to answer queries in this way, library school students will obtain a better understanding of all of the steps in the reference process.

2. Types of answers

The types of answers to be provided, assuming that the query is answered to completion, may range from nothing (there is no answer) to the text of one or more documents. Let us look at this range of types of answers. The "No, there is no answer in the literature" may be a very desirable response to a query by a researcher who wants to do work along the lines of the query and who will be pleased that no one else has beat him to the punch. He will be pleased unless he discovers later on that there was an answer in the literature. The "there is no answer" should typically be backed up with a list of tools and search headings checked by the reference librarian. Other answers in increasing physical size are a number or numbers with or without qualifications, a word or phrase, a document citation, a bibliography or list of document citations, a passage from a document, and complete texts of one or more documents.

3. Size of answer

The size of answer is related to the type of answer but it can also be looked at independently. We may characterize it as a single (and unique) answer such as a single number, a citation, a document, or we may characterize it as a multiple (and not unique) answer such as more than one number, more than one citation, or more than one document. Some queries have one and only one answer, as for example the professional address of a scientist. Other queries, such as queries for background information on a subject, typically have more than one document as answers. In fact one of many sets of documents or document extracts may serve as appropriate answers for background information queries.

4. Queries for recall versus discovery

A patron may remember (with varying degree of accuracy) a fact or a document that he has seen and wants to see again. This type of query is one of recall. The query is phrased in terms of remembered fact or combination of facts and the librarian looks for something presumably in existence. The discovery query has no such previous history. Here the patron is requesting documents or information that may or may not exist as far as he is concerned. This difference is mentioned since it may affect the way in which a librarian handles a query.

5. Types of tools used for answering queries

Reference queries can also be characterized in terms of types of tools used in answering the queries. We may, for example, have a dictionary query, a query for the definition of a word, or an encyclopedia query, one for the provision of background information on a given topic. We'll have more to say about types of reference tools later on.

6. Type of training required of person answering the query

This variable deals with how much and what type of training a person needs to have in order to answer different types of queries. The levels of training may include the absence of training in the conventional sense of the word (as in the case of queries answered by computers), clerical training, library science and/or subject training at either the undergraduate or graduate level. In theory, we shall use neither underqualified nor overqualified personnel for answering reference queries. In practice, there is no agreement on required training for different types of queries.

These are some but by no means all of the ways in which reference queries can be grouped. Other variables such as type of access points to use in the selected reference tools, whether or not the query needs to be negotiated, will be discussed subsequently.

Questions for discussion:

(1) Assume that there are different levels of reference service from self-service except for provision of answers to directional queries to compilation of critical reviews of the literature. Identify factors which have a bearing on the level of service to provide and apply factors to different types of libraries.

(2) What is meant by reference query variables? Which variables may be considered important in evaluating reference service by a library?

(3) Using the levels of training suggested in this stencil, identify types of queries that can or cannot be answered by machine, by clerks, or by librarians without subject training?

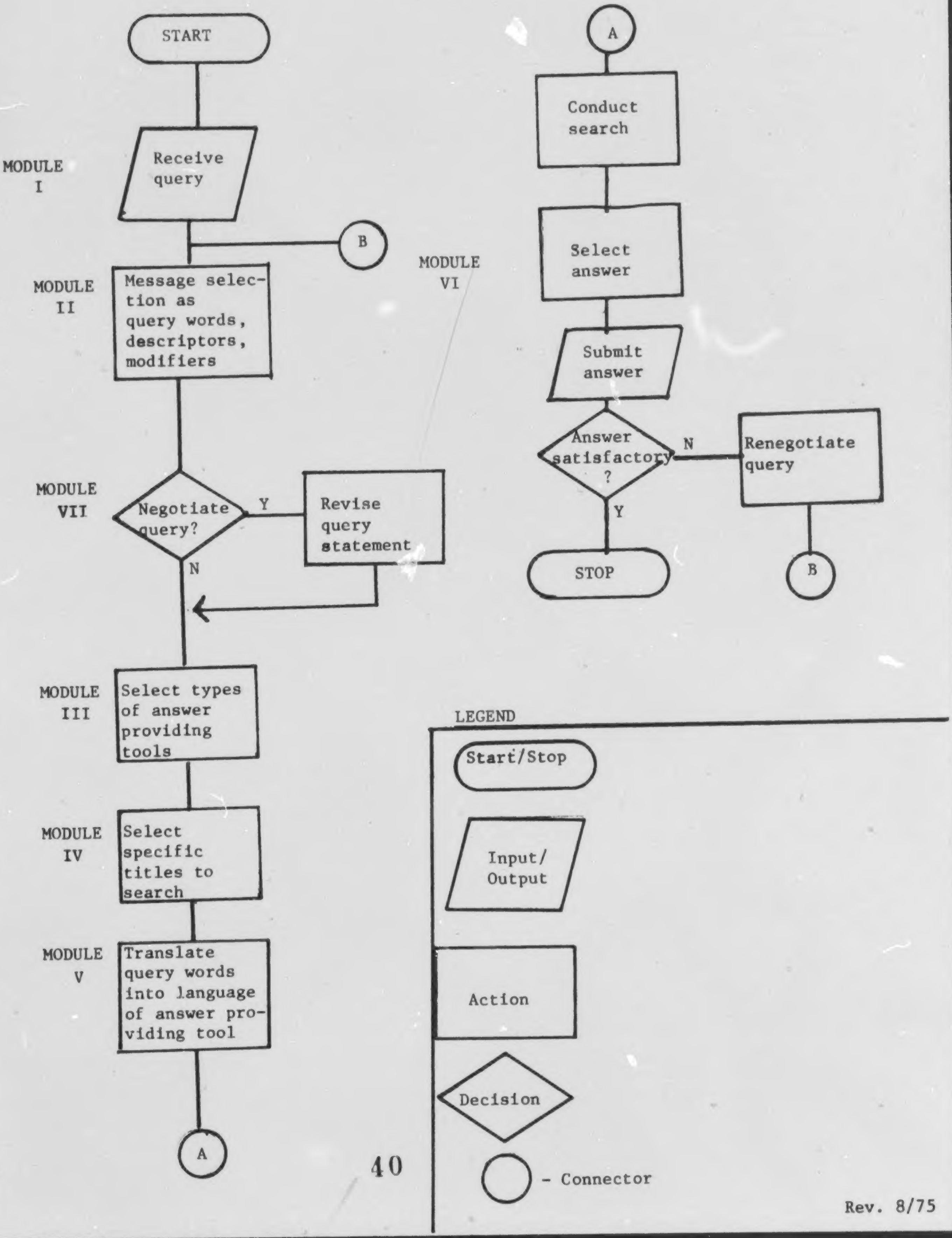
C. The process of answering reference queries

It is important, for several reasons, that we know how reference librarians go about answering queries. Teachers of reference work need to know this so that they can teach the process on a more general level than "how to answer reference queries good". Managers of reference departments need to know this in order to be able to evaluate the work of reference librarians. Also, we need to know how reference librarians answer queries so that we can determine which, if any, aspects of the tasks can be delegated to sub-professionals, clerks, or perhaps even to computers. Several librarians have viewed the process of answering reference queries as a series of decision making steps and have drawn this process as a flowchart. See, for example, the chapter in W. A. Katz's text for a comparison of several such flowcharts.[1] The process is viewed as a series of decision-making steps and these steps are drawn in correct sequence as a decision flowchart. The particular flowchart that we'll use for our exercises is reproduced as Figure 1. Consider it from the overall view only for now. Details will be covered subsequently. This model is based on a test that was carried out in 1974. The test was intended to tell us whether or not the model is an adequate representation of how the reference process is actually (rather than hypothetically) performed. The procedures used and the results of this test will now be summarized. Twenty-three science and technology reference librarians in university libraries were asked to submit records of queries that they answered during a one month period. They were asked to send us a record of all the queries (other than directional ones such as "Where is Chemical Abstracts?") answered that month. The record

---

[1] Katz, William A. Introduction to Reference Work. Vol. 2, 2nd ed. N.Y.: McGraw-Hill, 1974, pp. 136-44.

MODEL OF REFERENCE PROCESS
Figure 1


START
MODULE I
Receive query
B
MODULE II
Message selection as query words, descriptors, modifiers
MODULE VII
Negotiate query?
Y
Revise query statement
N
MODULE III
Select types of answer providing tools
MODULE IV
Select specific titles to search
MODULE V
Translate query words into language of answer providing tool
A
A
MODULE VI
Conduct search
Select answer
Submit answer
Answer satisfactory ?
N
Renegotiate query
Y
STOP
B
LEGEND
Start/Stop
Input/ Output
Action
Decision
- Connector

Rev. 8/75

of each query consists of a statement of the query as it was received, a statement of the query as finally answered for queries that had to be negotiated, as well as the answer provided for each query. The librarians collected records of over 400 actually answered queries. The records of these queries were used for the next stage of the project, the testing of the descriptive model of the reference process. For this stage of the project, the decision making steps of the descriptive model were translated into a series of questions. These questions are incorporated into a form called the reference query analysis form. Reference librarians participating in the project were given the records of the 400 plus queries (statement of query and answer provided) and were asked to perform the query analysis and search strategy development steps with the aid of query analysis forms. Each of the 23 reference librarians who agreed to cooperate in this test was asked to complete query analysis forms for 20 queries. Then each librarian was asked whether or not the model as represented by the query analysis form was an adequate representation of how (s)he as a practicing reference librarian typically performs this task. Seventeen said "yes" or "yes" with qualifications and 6 said "no" or gave a qualified "no" answer, or did not answer the question. Comments and suggestions by the reference librarians as well as further work on the model by the project staff led to a revised version of the model, a version given as a flowchart in Figure 1.

The flowchart will be used as a framework for teaching the process of answering reference queries. A few words about it are therefore in order. Queries may be received in person, by phone, or by mail. The record of information need submitted to the librarian is called the query statement. The librarian begins the reference process by selecting the message from the query statement. The message is examined to determine whether the query should be searched as stated or whether ambiguities in the message need to be resolved before the query is to be searched. The process of resolving ambiguities is called negotiation. Next, for both unnegotiated and negotiated queries, the types of answer-providing tools to be searched are determined. This is followed by the selection of specific answer-providing titles. After that, types and specific access points to search in the selected answer-providing titles are determined. The search is completed, if successful, by the selection of the answer from the answer-providing tools. If the search was unsuccessful, the query is renegotiated. Renegotiated queries follow the same decision-making steps as the (upon receipt) negotiated queries.

The correct answer to a query is to a large extent dependent upon correct decisions in each of the steps of the reference process. Practice will be provided in performing the individual steps of the reference process. When you have completed this practice you should be ready to answer reference queries.

II. Message Selection

Objective: selection of content-bearing (message) words from a query on both a specific level (the level given in a query) and on a generic level.

A query is a statement of information need that the reference librarian attempts to answer. The reason we call such a statement a "query" instead of a "question" is to differentiate between the original statement submitted by the patron (the query), and the subsequent statements asked by the librarian about it (the questions). This avoids asking questions about questions, which is both awkward and ambiguous.

The message selection step, just as every one of the five subsequent steps, is a key step in the reference process. We say this because an error in the performance of any of these steps is likely to result in an incorrectly answered query. In the following query: "I would like to have a biographical sketch of Reubin Askew," the message words are "biographical sketch" and "Reubin Askew." A misunderstanding of these message words would probably result in an incorrect answer to the query. The other words in this query are considered non-message words or non-content bearing words, since they tell us nothing about the query.

How does the experienced reference librarian perform the message selection step? We only know that message selection occurs, but not how it is performed by the reference librarian. In this stencil we will describe a suggested procedure for performing this task. Consider it as a mental aid. Use the procedure until you feel confident in doing the step without this aid. In this procedure, the message step is broken down into several smaller steps. These sub-steps are intended to accomplish two things:

1. The selection of the specific message words, usually the words used in the query statement itself. In the above example, these words are "biographical sketch" and "Reubin Askew."

2. The selection of generic message words. In the above example,

these would be "background information" and "persons." We'll explain how we selected these terms shortly. Both specific and generic message words will be used later in performing the subsequent steps of the reference process.

Every query statement consists of two parts or components. One part specifies what is known. The other part specifies what is wanted. In our query statement what is known is "Reubin Askew" and what is wanted is "biographical sketch." If either the known or the wanted is missing, the statement is not a query statement. "Give me Reubin Askew" is not a query statement (at least not one that can be answered by a reference librarian). "Give me a biographical sketch" is not a query statement either, because it is incomplete.

If we accept the idea that each query statement consists of two parts, it enables us to do two things: (1) determine the known or access point for the query and (2) determine the wanted or expected answer for the query. The access point is the "key" or "handle" with which to approach a reference tool. For example, in the query: "What is the address of Gulf Oil?", "Gulf Oil" is the "key" or access point in the answer-containing tool. This reference tool may tell us a number of things about this company: the name of its president, last year's profit and loss statement, or pictures of its refineries. In this example, however, all that we are interested in is the company's address. Thus "address" becomes the expected answer for this query. We call the access points and expected answer known and wanted descriptors respectively when they are stated generically.

In addition to the access point (known descriptors) and expected answer (wanted descriptors), queries may also contain additional clues that aid in answering the query. We call these clues modifiers. Here are some examples of modifiers. In the query statement: "Find a picture of

TABLE 2

CHECKLIST OF WANTEDS, KNOWNS AND MODIFIERS

WANTEDS (TYPES OF EXPECTED ANSWERS)

1. Dates (specific dates)
2. Events (involving people)
3. Illustrations

4. Numeric information
   a. properties (scientifically measured)
   b. statistics (involves counting) and other
5. Organizations
6. Persons
7. Addresses and general locations
8. Publications
   a. citations (including bibliographies)
   b. document locations
   d. verification or completion of bibliographic data
9. Terms or subjects
   a. abbreviations
   b. words, phrases, definitions
   c. abstracts, annotations, recommendation of publications
   d. general or background information
10. Unspecified or other (list particular wanted)

KNOWNS (TYPES OF ACCESS POINTS)

12. Abbreviations
13. Dates (specific dates)
14. Events (involving people)
15. Illustrations

16. Organizations (specifically named; includes corporate authors)
17. Persons (specifically named; includes authors)
18. Places
19. Terms or subjects (other than specific types already listed)
20. Titles of publications (specifically names)
21. Unspecified or other (list particular known)

TYPES OF MODIFIERS

22. Academic discipline
23. Amount of expected information
24. Foreign language
25. Level of information
26. Place
27. Time period
28. Type of publication

FOR EACH APPLICABLE TYPE OF MODIFIER SELECT ONE OF THE FOLLOWING QUALIFIERS:

a. Applicable and stated in query (list the particular modifier)
b. Applicable but not stated in query (reason for negotiation)

Alexander Fleming, a British scientist who discovered penicillin in the 1930's", "Alexander Fleming" is the access point, "picture" is the expected answer. The additional clues in this query statement, clues that we call modifiers, are "British scientist," "penicillin," and "1930's." These are clues because they qualify (modify) what is known and/or what is wanted. Modifiers may or may not be present in query statements. The absence of modifiers may be an indication that the query requires negotiation, something that we will deal with subsequently. By themselves, modifiers are useless. They need to be used in conjunction with access points and expected answer components of queries.

Thus far we have indicated that there are at least two parts in each query statement--the known and wanted parts. In some query statements, there is a third part, the part that gives us additional information about what is known or what is wanted. This third part is called the modifier. Let us now turn to how we propose to use these different parts of the query statement in answering a query.

One use has already been alluded to. This is the use of the known, wanted, and modifier categorization as a framework for selecting specific message words from the query. In other words, you look for known, wanted, and modifier words in each query statement. When you have identified them, you have also identified the message of the query. To make this message selection process even simpler and more consistent, we have grouped the individual known, wanted, and modifier terms under broader terms. In this way you will be aided not only in selecting such terms but also in selecting types of known, wanted, and modifier terms. These broad types of terms are called known descriptors, wanted descriptors, and modifiers. The checklist of known descriptors, wanted descriptors, and modifiers, is given in Table 1. To get back to the biographical sketch of Reubin Askew query, the known descriptor is "persons" and the wanted descriptor is "background information." This query has no modifier. "Governor of Florida," "1975" might have been provided as modifiers for this query.

Before we discuss the checklist of descriptors, a few words about it are in order. A checklist such as this one, which is intended to be scanned from end to end for answering each query statement, has to have at least two properties. It needs to be short, otherwise it can't be conveniently scanned in its entirety for each use. Also, the individual terms on the checklist must be unambiguous, otherwise there will be problems in using the list. We claim success on the first point and ask for forbearance on the second one. This is about the ninth revision of the checklist and it is not perfect as yet. We have attempted to eliminate ambiguities by adding brief definitions (scope notes) to some descriptors. This is the first test of this list by students and we'd like to hear what (if any) problems you encounter.

The other use of the checklist of descriptors is to aid in the selection of both types of answer providing tools (the reference tools that will contain the answer to the query), and specific titles of such types of tools. Just as query statements can be translated into known and wanted descriptors, so can the information contained in the types of tools. Once we have selected the combination of known and wanted descriptors for a query statement, we can look for types of tools that are characterized by this combination of descriptors. This process will be facilitated with a list of known and wanted descriptor combinations and corresponding types of reference tools. In some cases, the specific titles of reference tools to be searched for a query may be selected by adding the modifiers to the known and wanted descriptors. More will be said about this procedure subsequently.

KNOWN DESCRIPTORS

We will now provide a brief explanation and an example of use of each known descriptor.

12. Abbreviations. Use when an abbreviation to be identified is given in the query. Example: What are IAC's?"

13. Dates. Use when a date in the query will be used as an access point. Example: "Which group of historians will meet in November 1976?" A date may also be a modifier, a situation that will be dealt with subsequently.

14. Events (involving people). Use for activity that either has or will take place, e.g. a meeting of a group of scholars, or the World Series. Do not use for natural phenomena such as tides, sunrises. Example: "I would like information for short paper on the battle of Gettysburg."

15. Illustrations. Use when any type of illustration is mentioned in the query, e.g. maps, pictures, symbols (which are actually standardized pictures), graphs, or a sample of the object itself, e.g. an insect. Examples: "What does < > mean?" "What kind of flower is this?"

16. Organizations (specifically named). Use when names of companies, government agencies, libraries, etc. are given. Also used when corporate author of a publication is given. Example: "Where is the National Institute of Health?"

17. Persons (specifically named). Use when name of individual is given. Also used when personal author of a publication is given. Example: "I would like to see a copy of Edwin Way Teale's book on winter."

18. Places (specifically named). Use when specific place name is given as access point. Example: "Where is Lock Ness?" Places may also be modifiers, e.g.: "I want information on Hiram Fong, who lives in Hawaii." In this case the known descriptor (access point) is "persons"

and Hawaii is the modifier since you would not look under the place to answer this query.

19. Terms or subjects (other than specific ones listed as descriptors 12-18). Use when word or subject is access point in a query and cannot be otherwise characterized by the checklist. Examples: "I want background information on nuclear physics." "What does oxidation mean ?"

20. Titles of publications. Use when title of specific book, journal, report, dissertation, or other publication is given. If both author and title are given, select author (persons) since this is typically the simple access point to search. Example: "Do you have American Heritage?"

21. Unspecified/other. Use either when a known descriptor is not present in a query, or when the known aspect of the query cannot be translated into any of the specific descriptors. An unspecified known descriptor in a query statement would have to be negotiated since such a query could not be searched. Example: "I want some statistics."

WANTED DESCRIPTORS

Wanted descriptors enable us to determine what the expected answer to a query should be. Again, we have grouped such expected types of answers into a small number of categories labeled descriptors. There will be some repetitions in the known and wanted descriptor lists since what is wanted in one query may be what is known in another. Again, we will provide brief instructions for and examples of these wanted descriptors.

1. Dates. This can be specific, e.g. June 6, 1976 or generic, e.g. Eighteenth century. Do not use for citation verification since typically other information (author, title, publisher) is also wanted. Example: "When was the first cyclotron built?"

2. Events. Events are more commonly given as known descriptors in a query than as wanted ones. An example of the use of "Events" as a wanted

descriptor is "What literary award did Michael Schaara receive in 1975?" The event should be a single point in time rather than something that occurred over an extended period such as the history of democracy in America.

3. Illustrations. Use when a picture, map, symbol, or any other type of illustration is wanted, as in "Where is a picture of Harry Truman?" "Do you have a map of St. Petersburg?" "What is the symbol for standard deviation of a statistical population?"
4. Numeric information. Two descriptors are provided: 4a to characterize the results of measurements, e.g. the length of a fish, and 4b to characterize the results of counting, e.g. the number of passenger cars sold in a particular location over a period of time, and other numeric information, e.g. the price of wheat. The identifying characteristic of these two descriptors is that the expected answer is a number or series of numbers with or without qualifications. Example of 4a (properties): "What is the distance of the galaxy Andromeda?" Example of 4b (statistics): "What is the average yield per acre of cucumbers grown in Leon County, Florida?"
5. Organizations. Use when names of companies, government agencies, libraries, etc. are wanted. For name of publisher in the case of a citation verification, use 8d. Example: "Who sells Waring blenders in Miami?"
6. Persons. Use when names of individuals are wanted. For names of authors in cases of citation verification, use 8d. Example: "Who invented Xerography?"
7. Addresses and general locations. Use for wanted places, typically addresses. For place of publication in citation verification, use 8d. Example: What is the address of Leonard Bernstein?

8. Publications. This descriptor is often the expected answer in a query even though it may not be stated as such, as, for example, "Where can I find information on the use of coconut milk for growing cacti?" in view of the heavy use of publications as an expected answer, the following three more specific publication descriptors have been prepared.

   8a. Citations. Use this descriptor when only bibliographic citations are wanted. Example: "Provide me with a list of references on growing orchids."

   8b. Document location. Use this for requests for location of known documents in either the local library or in another library. Example: "Where is the July 1956 issue of the Atlantic Monthly?"

   8d. Verification or completion of bibliographic data. Use when part of a citation is given and the citation is to be completed or when an entire citation is to be required. Use this wanted descriptor for citation completion or verification rather than wanted descriptors 5, 6, or 7. Example: "Verify C. Mooers, Aslib Proc. 1956."

9. Terms or subjects. This group of descriptors identifies the amount of textual (rather than bibliographic) information expected. The following four specific descriptors have been prepared.

   9a. Abbreviations. Use when an abbreviation for a term is wanted. For example, "What is the abbreviation for information analysis centers?"

   9b. Words, phrases, definitions. Use for identification of a given abbreviation or for definitions of terms. Example: "Does plumbum have anything to do with plumbs?"

   9c. Abstracts, annotations or recommended publications. Use when summaries of documents are wanted in addition to citations. Example: "Provide a summary of journal articles on required courses taught in library schools." Also use when a book or other type of publication is to be recommended.

9d. General or background information. Use when more than definitions, or summaries of doucments are wanted as for example, when full texts or long extracts of text are anticipated answers. Example: "I want to read up on the history of Liberia."

10. Unspecified or unknown. This should only be used for query statements in which what is wanted is not stated. The use of this descriptor is a clue that the query needs to be negotiated.

MODIFIERS

In addition to a wanted and known descriptor, a query statement may include one or more modifiers. Notice that modifiers supplement but do not replace known and wanted descriptors. Modifers provide additional clues about what is known and/or what is wanted. A list of types of modifiers is given below, again with some explanatory noted.

22. Academic disciplines. This refers to the subject of the query, whether it is, for example, concerned with home economics, Roman history, or carpentry.

23. Amount of expected information. This refers to the amount of text or the number of citations the patron wants.

24. Foreign languages. This modifies either a known or wanted descriptor such as the modification of a term (it is German) or the modification of an expected answer (it has to be in English).

25. Level of information. This refers to the relative difficulty of material to be given to the patron. Not all queries are level-sensitive. For example,

queries for numeric information, citation verification are not. Material may be for laymen, experts outside his field, or experts in his field, to give examples of three levels.

26. Place. This refers to the modification of a person ("he lives in New York") or most of the other known descriptors.

27. Time period. Used similarly to the place modifier.

28. Type of publication. Used when query statement specifies that a specific type of publication, e.g. journal article, dissertation is wanted.

Questions for discussion

1. What is the difference between a known descriptor and a wanted descriptor?
2. What is the difference between descriptors and modifiers?
3. What is the difference between query message words and descriptors?
4. Which known descriptors, wanted descriptors, or modifiers require further definition or explanation for unambiguous use?
5. Can the message selection step be performed by either clerks or computers?

Work out the exercises to be provided separately and be prepared to discuss the answers to the exercises in class.

III. Selection of types of answer-providing tools

Objective: The selection of one or more types of answer-providing tools with the aid of known and wanted descriptors.

In the last chapter we have discussed the process of selecting the message from a query with the aid of known descriptors, wanted descriptors, and modifiers. If a query can be answered without negotiation (further discussion with the patron), the next step in the reference process is usually the selection of the type or types of answer-providing tools for that query. The experienced reference librarian probably combines this and the next step into a single step. We are treating each step separately to help you in learning the process. Let us begin with a simple query as an example of carrying out the answer providing tool selection step. We have a query from a layman for background information on digital computers. The known descriptor for this query is "terms or subjects," the wanted descriptor is "general or background information" and the modifier (which we do not use in this step) is "elementary level." A reference librarian is likely to select three types of tools that have answers to this query: encyclopedias, texts, and handbooks. These are examples of types of answer-providing tools for reference queries. When we consult these tools, we expect to locate therein an answer to the query. A list of types of answer-providing tools is given as Table 1. This is a good place to differentiate

TABLE 3

TYPES OF ANSWER-PROVIDING TOOLS

A	Atlases, Maps
B	Biographical sources
C	Card catalogs, union lists
D	Dictionaries
E	Encyclopedias
G	Guides to the literature
H	Handbooks, manuals, and almanacs
I	Indexes, bibliographies, and abstracts
M	Monographs, texts
N	Non-biographical directories
P	Primary publications. This includes dissertations, reports, primary journals and conference proceedings.
Y	Yearbooks

answer-providing tools from lead-in tools. Lead-in tools, as you might suspect from their name are used primarily for the identification of specific titles of answer-providing tools, once you have identified the type of answer-providing tool that you need. For example, if you do not know which text has an answer to a query, you go to a lead-in tool to identify a specific title. The lead-in tool in this instance is probably the library catalog. Now, to make matters slightly more complex and not to lull you into a false sense of security, lead-in tools are sometimes used as answer-providing tools, and vice versa. Here is how. If a query is for the location of a book in the library, the answer is the book's call number. This is found through the library catalog, ordinarily a lead-in tool but in this instance an answer providing tool. A query for journal articles and books on a subject for which the answers are located through a bibliography in an encyclopedia article is an instance in which the encyclopedia is used as a lead-in tool rather than an answer-providing tool.

How does one select a type of or types of answer-providing tools for a given query? The experienced reference librarian probably associates type of information content with type of answer-providing tool and probably makes a mental match between the information need expressed in the query and the expected content of type or types of reference tools. In Table 2, Wanted-Known Descriptor Matrix, we have provided a mental aid with which you can match the message of a query expressed as descriptors with the content of a type or types of answer-providing tools. This table, or more precisely this matrix, was prepared by indexing the content of types of answer-providing tools with known and wanted descriptors. There is a difference in the indexing of the message in a query and the indexing of the content of a type of answer-providing reference tool.

The following examples will illustrate the use of the matrix.

Query: What does the abbreviation "ibid." mean?

Descriptors: 9b, 12

Type of answer providing tool with this combination of descriptors: D - Dictionaries.

Query: Where can I locate background information about Florida State University.

Descriptors: 9d, 16

Types of answer providing tools with this combination of descriptors: E - Encyclopedias, H - Handbooks, Manuals, Almanacs, N - Non-biographical directors, P - Primary publications.

Notice that a single type of answer-providing tool was selected for the first query and more than one type of tool was selected for the second query. In what sequence should answer-providing tools be searched if there is a choice among types of answer-providing tools to use? There is undoubtedly an optimum search sequence but we cannot make any generalizations about this sequence at the present time. This is an area for needed research in reference work. All things being equal, the optimum search sequence should get us the best answer in the least time. Thus if there is a choice between an encyclopedia with a known location and another type of answer-providing tool with a location that has to be determined through the library card catalog, for example a

TABLE 4
Tool Descriptor Matrix

REVISED 12-75

WANTEDS	Dates	Events	Illustrations	Properties	Statistics	Organizations	Persons	Addresses, locations	Citations	Document locations	Verification of publications	Abbreviations	Words, phrases, definitions	Abstracts, annotations, recommendations of publications	General information	Unspecified or other	
KNOWNS	1.	2.	3.	4a.	4b.	5.	6.	7.	8a.	8b.	8d.	9a.	9b.	9c.	9d.	10.	
12. Abbreviations						D							D				12.
13. Dates		HM Y				Y	Y		I		I		Y	I	HM Y		13.
14. Events	EH M		AE MY		EHM Y	EM	EH MY	EH MY	CI				EH MY	I	EM P		14.
15. Illustrations				H	H								H		H		15.
16. Organizations	EH M	EN Y	E MP		NE	N	EMN	EG HN	CI	C	CI	D N		GI	EH NP		16.
17. Persons	BDE H	BD EH	BE MY	BE HY	BE HY	BE	BEM	AB EM	BC I	C	CI		BD E	GI	BEM PY		17.
18. Places	EHM	EH MY	AE HM	AD EH	AD EH	N	AE	AD EH	CI	C		D	D	I	AE HM		18.
19. Terms or subjects	DE HM	EM	AD EHM	DE H	EH NY	N	BE Y	E	CG I	C	CI	DE	DE H	GI	EH M		19.
20. Titles					I N P				CG I	C	CI P	I		GIN P	EG IP		20.
21. Unspecified																	21.
	1.	2.	3.	4a.	4b.	5.	6.	7.	8a.	8b.	8d.	9a.	9b.	9c.	9d.	10.	

text, then the encyclopedia might be the first type of tool to search. However, if the patron wants to borrow the document, a text might be a better choice even though it usually takes longer to locate such an answer-providing tool. The message in a query is indexed with only one known descriptor and only one wanted descriptor. There is no such limitation on the number of descriptors used for indexing the content of each type of answer-providing reference tool. In the matrix, each box represents a unique combination of known and wanted descriptors. In these boxes we have placed the letter or letters of types of answer-providing tools that are indexed by that combination of known and wanted descriptors.

To help you in the use of answer-providing tools, a brief description of each type of tool is given below. Also included for each type of answer providing tool is the list of wanted and known descriptors used for indexing each type of tool. These combinations of wanted and known descriptors form the basis for the matrix that is to be used as an aid in selecting types of answer-providing tools.

A. Atlases, maps. An atlas is a collection of maps, usually containing physical, route, and political maps, but not restricted to these types. Maps are defined as representations of surfaces, showing the whole or part of an area, indicating distance and size according to a set scale. There are various types of maps, such as astronomical, physical, historical, political, etc.

Atlases and maps

Wanted 3-illustrations, 4-properties and statistics, 6-persons, 7-addresses, 9d-general information.

Known 14-events, 17-persons, 18-places, 19-terms and subjects.

B Biographical sources. Also called biographic dictionaries or biographic directories, are reference tools giving information about individuals. The minimum information given is the name and address of an individual. Additional information that may be included is date of birth, professional and avocational interests, membership in organizations, and publications. Biographical sources are usually arranged alphabetically and may contain an index by geography or profession. Biographical sources differ in terms of time period covered, criteria for listing biographee, subjects included, and amount of information given for each biographee.

Biographical sources

Wanted 1-dates, 2-events, 3-illustrations, 4-properties, etc., 5-organizations, 6-persons, 7-addresses, 9b-words, definitions, and phrases, 9d-general information, 8a-citations.

Known 17-persons.

C Card catalogs, union lists. These tools are locating devices. The card catalog is the most commonly used catalog today. Entries for books are on separate cards arranged in order, usually in a single alphabet. The catalog enables the user to see what a library holds and where to find it. A union list is a complete record of the holdings for a group of libraries. It may be a general list or restricted to materials in a certain field, on a particular subject, or of a given type, such as periodicals or annuals. This tool helps to identify and locate where a title may be found.

Card catalogs and union lists

Wanted	8a-citations, 8b-document location, 8d-verification of publications.
Known	14-events, 16-organizations, 17-persons, 18-places, 19-terms or subjects, 20-titles.

D Dictionaries. Normally this tool provides the spelling, pronunciation, definition and syllabification of words in a single alphabet. Some dictionaries go beyond these functions and provide etymology, names of major places, commonly used foreign terms, slang words, abbreviations, synonyms and antonyms. Specialized dictionaries are also included in this category.

Dictionaries

Wanted	1-dates, 2-events, 3-illustrations, 4-properties, etc., 5-organizations, 7-addresses,

9a-abbreviations, 9b-words, etc.

Known 12-abbreviations, 16-organizations, 17-persons, 18-places, 19-terms or subjects.

E Encyclopedias. Multivolume set arranged in a single alphabet, containing articles on many subjects. This type is generally directed to a particular level of sophistication. The subject encyclopedia, as the name implies, deals with one subject specifically. Many encyclopedias contain indexes. Articles are revised on a rotative basis to keep the work up-to-date, and yearbooks are published to maintain the currency of older editions.

Encyclopedias

Wanted 1-dates, 2-events, 3-illustrations, 4-properties, etc., 5-organizations, 6-persons, 7-addresses, 9a-abbreviations, 9b-words, etc., 9d-general information.

Known 14-events, 16-organizations, 17-persons, 18-places, 19-terms or subjects.

G Guides to the literature. Annotated listings of basic titles in a particular field. Guides are helpful in the sense that a librarian does not have to remember all titles available. They can be used as selection tools. Guides may also include introductory analysis on subjects, on techniques of literature searching as well as lists of libraries, publishers and other organizations.

Guides to the literature

Wanted 7-addresses, 8a-citations, 9c-abstracts, 9d-general information.

Known 16-organizations, 17 persons, 19-terms or subjects, 20-titles.

H *Handbooks, manuals, and almanacs*. Handbooks and manuals are compact reference tools that treat concisely the essentials of a subject. They offer simple but comprehensive treatments on special subjects, giving concise information. They carry compilations of miscellaneous information such as literary, historical and statistical data on the subjects covered, being a source subject to constant revision. Almanacs are publications, usually annual, containing a variety of useful facts of a miscellaneous nature, and statistical information. It was originally a projection of the coming year by days, months, holidays, etc.

Handbooks, manuals, almanacs

Wanted 1-dates, 2-events, 3-illustrations, 4-properties and statistics, 6-persons, 7-addresses, 9b words, etc., 9d-general information.

Known 13-dates, 14-events, 15-illustrations, 16-organizations, 17-persons, 18-places, 19-terms, subjects.

I Indexes, bibliographies and abstracts. An index is a guide to items, terms words, ideas, concepts, information or data contained in a source or group of sources of recorded data or information. It is alphabetically or systematically arranged, giving enough information for each term or concept to be traced by means of a bibliographic citation or other symbol. As a tool for tapping the contents of almost any work, indexes are invaluable, as they serve to lead the user to other sources of information besides books, such as periodicals and newspapers. A bibliography is a publication listing materials such as books and periodical articles on a given subject, and arranged in some logical or systematic order. They provide enough information for the materials to be traced, usually in the form of a bibliographic citation. That is, they serve as lead-in tools to the source or sources of a possible answer. They are useful for verification and completion of data regarding a publication as well as for finding out what material exist on a given topic. Abstracts are a form of current bibliography that give, in a brief form, the contents of a document preceded by a bibliographic citation. Though another form of lead-in tool it goes a step further than the index by not only locating the document but by briefly describing its essential points. Therefore, it saves time by indicating to the user the contents of a document; it serves also as a method of surveying the retrospective literature without having to look at the primary materials.

Indexes, bibliographies, abstracts

Wanted	4b-statistics, 8a-citations, 8d-verification of publications, 9a-abbreviations, 9c-abstracts.
Known	13-dates, 14-events, 16-organizations, 17-persons, 18-places, 19-terms, etc., 20-titles.

M Monographs, texts. Systematic treatise on a particular subject or classes of subjects, usually detailed in treatment but not extensive in scope. It often contains extensive bibliographies. As opposed to primary publications, monographs and texts are frequently edited or modified results of original research or scholarship.

Monographs, texts

Wanted	1-dates, 2-events, 3-illustrations, 4b-statistics, 5-organizations, 6-persons, 7-addresses, 9b-words, etc., 9d-general information.
Known	13-dates, 14-events, 16-organizations, 17-persons, 18-places, 19-terms, etc.

N *Non-biographical directories*. These directories cover organizations, agencies, firms, clubs, societies, associations, institutions, and official bodies, describing their structure and operations. They may also list their members and officers, their addresses and functions and similar data. They also cover manufacturers or business houses in a particular trade or profession; they are usually arranged in alphabetical or classed order.

Non-biographical directories

Wanted 2-events, 4b-statistics, 5-organizwtions, 6-persons, 7-addresses, 9a-abbreviations, 9c-abstracts, 9d-general information.

Known 16-organizations, 20-titles.

P *Primary publications*. Published reports of research or scholarship typically in their initial form. These reports are most frequently the result of experiments or surveys and may be published as articles in primary journals, as conference proceedings, as individually published or distributed reports, and as dissertations.

Primary publications

Wanted 3-illustrations, 4b-statistics, 8d-verification of publications, 9c-abstracts, 9d-general information.

Known 14-events, 16-organizations, 17-persons, 20-titles.

Y **Yearbooks.**

General yearbooks are frequently published in conjunction with general encyclopedias and contain information and are structured in format similar to that found in general encyclopedias. Specialized yearbooks contain information related to specific subject areas. Yearbooks are used for current facts and statistics and current events; information about events in the past (old yearbooks); and in the study of trends and developments.

Yearbooks

Wanted	2-events, 3-illustrations, 4-properties, etc., 5-organizations, 7-addresses, 9b-words, etc., 9d-general information.
Known	13-dates, 14 events, 16-organizations, 17-persons, 18-places, 19-terms, etc.

In this chapter we have discussed the selection of types of answer-providing tools with the aid of a descriptor matrix. We have also indicated that there are, at times, choices among types of answer-providing reference tools to search. The basis for making such choices is still largely a subjective matter.

Questions for Discussion

1. Give instances in which lead-in tools are used as answer providing tools as well as instances in which answer-providing tools are used as lead-in tools.
2. Consider factors that have a bearing on the selection of the search sequence of the various types of answer-providing tools.
3. Why would it be useful to know the optimum search sequence of types of answer-providing reference tools?

A separate exercise is provided with this chapter.

IV. Selection of specific answer providing titles

Objectives: Selection of answer providing titles with the aid of lead-in tools.

In previous stencils we have discussed the selection of the message from the query as query words and as known descriptors, wanted descriptors, and modifiers. We have also discussed the selection of types of reference tools, such as dictionaries or encyclopedias, with the aid of specific combinations of known and wanted descriptors. The next step in the reference process is the selection of specific answer providing titles. An experienced reference librarian is familiar with the content and location of numerous reference tools. Often, he will go directly to the shelves to look up the answer to a query because of his familiarity with the collection. There are times, however, when even the experienced reference librarian needs a memory aid, since it is impossible for him to remember the thousands of titles that might contain an answer to a query. At such times lead-in tools identify specific answer providing titles.

To set the stage for this model, let us begin with a simple example. You are asked a query that can be answered with a general encyclopedia. You are familiar with both a specific general encyclopedia title and its location and can therefore go directly to the shelves to answer the query. In this example you translate the type of tool needed into a specific title of the tool and you did this without memory aid. Let us now make the example a bit more difficult and illustrate a case for which a memory aid is required. The query is for the name of a manufacturer of egg containers in Liberia. You know that this query will be answered in a particular type of tool, a directory, but unless you have an unusual memory or have answered a similar query recently, you won't know what specific title will answer this query. This is where the lead-in tools come in.

Lead-in tools, as their name indicates, are used primarily to identify specific titles that contain answers to queries, rather than answer the queries themselves. Lead-in tools can be viewed as the bridge between the type of tool and the specific answer providing tool. What options do we have in selecting lead-in tools? Basically, there are four options that can be used singly or in combination.

1. The card catalog
2. Browsing or going to a section of the shelves where answer providing tools are located. (This is not strictly a tool but a procedure.)
3. Guides to the literature
4. Bibliographies of (single) types of tools

Let's talk a little about these four options or possibilities. Option one, the card catalog, is fairly straight forward (at least in its description). You look under the appropriate subject heading, select answer providing titles, copy the call numbers, and go to the shelves for the selected titles. Option number two, browsing in the shelves, is a matter of looking over the reference books or a portion thereof. The arrangement of a particular collection may or may not make this an easy task. Option three, the use of guides to the literature, may also require the identification of the specific lead-in titles through the card catalog unless your guides are in a special area of the reference collection, or unless you have memorized names and locations of specific guides to the literature. Option number four, checking in bibliographies of types of tools such as directories or dictionaries, also may require as first step the identification and location of specific titles through the card catalog. Here is an example of the use of lead-in tools for a specific query.

Query: What does Wasserstoff mean? Believed to be a German word in the field of chemistry.

Known descriptor: Term or subject

Wanted descriptor: Textual information - definition

Modifiers: German language, chemistry

Type of tool: dictionary, encyclopedia

Lead-in options:

1. Card catalog subject heading: Reference books - Bibliography; Science - Dictionaries - German
2. Browsing in stacks around class number Q123. (The class number was located under subject heading).
3. Guide to the literature: Winchell, Constance M. Guide to Reference Books. Chicago: ALA, 1967. 8th ed., p. 557.
4. Bibliography of type of tool: UNESCO. Bibliography of Interlingual Scientific and Technical Dictionaries. 5th ed. UNESCO, 1969, p. 66-72.

   Access point used: 54 (The Dewey number for chemistry)

Which lead-in tool or combination of lead-in tools should we use to identify and locate a specific answer providing title? In theory, we should use the path that gets us to the answer providing tool the quickest. Reference librarians probably know what the "least search path" is but they have not told us formally. No researcher has made a study of this and reference librarians have not written about it. The literature is silent on the subject. The factors that make one approach better than the other are probably the key to which path to pursue for the identification and location of specific answer providing titles. Listed below are some of these factors labeled as advantages and disadvantages for each of the four methods.

Factors to consider in the selection of type of lead-in tool

Type of lead-in tool	Advantages	Disadvantages
1. Card catalog	One step for call number identification Documents in catalog are typically in library	Titles not evaluated Titles not annotated Titles may not be restricted to one's own collection Subject heading may be difficult to locate
2. Browsing in reference shelves	One step search Choice based on external appearance of tool itself Tool available for immediate inspection	Not all reference materials shelved together
3. Guide to the literature	Titles frequently evaluated Titles frequently annotated	Two step search Title may not be in collection
4. Bibliography of type of tool	Typically most complete list of specific titles Title frequently annotated	Two step search Title may not be in collection Bibliography may not be recent

Let us assume that you have used a lead-in tool or a combination of such tools to select answer providing titles. Let us further assume that there is a choice among many titles, in fact there are more titles than you have time to consult. What should be the basis for making such a choice? In general, select titles that match the subject of the query the closest. For example, to translate a German term in the field of chemisty use a German chemistry dictionary rather than a German science or a German general dictionary. Other criteria include amount of information on subject, ease of access to information, and recency of title.

Questions for discussion:

1. Under what circumstances would you go first to the card catalog for the selection of an answer providing title?
2. Under what circumstances would you not use the card catalog for locating answer providing titles?
3. Under what circumstances would you recommend adding of call numbers to titles in a guide to the literature or a bibliography?
4. If you were asked to conduct a study aimed at determining the least search path for identifying answer providing tools, how would you go about this?

Exercise:

For each of the queries given to you, select an answer providing title. Indicate for class discussion which type of lead-in tool you used and what specific access point you used for selecting your answer providing title. You need not answer the queries in this exercise.

V. Selection of search headings

Objective: Translation of message words into search headings.

We are now ready to search the specific answer providing tools that were identified from memory or with the aid of lead-in tools in the last stencil. In an earlier stencil, the message selection stencil, we characterized the message words in the query both generically and specifically. We characterized these words generically as known descriptors, wanted descriptors, and modifiers. Each known and wanted descriptor and modifier has a corresponding and more specific term - the word or words used in the query statement itself. In this stencil we are concerned with the known descriptor and its corresponding more specific term, the known term in the query statement.

The known descriptor identifies not only what is known in the query but also the type of access point to search in a reference tool for answering that query. The specific term corresponding to the known descriptor in a query identifies the search heading or precursor of the search heading to use in the answer providing tool. An example will illustrate this point. In the query, "Give me biographic information on John E. Swoboda.", the known descriptor is "Persons" and the more specific term for the known descriptor is "John E. Swoboda". The type of access point to use is "Persons" (the personal author index). The search heading for this query is "Swoboda, John E.". If there is no information under "Swoboda, John E." and there is information under another term, then the query term becomes the search heading precursor since we have to translate it into the search headings used in a specific tool. The translation of the search heading precursor into the search heading is the topic of this stencil. This task may be necessary for both author and subject searches, when the words in the query do not match the subject headings in the answer providing tool.

A general warning about selection of specific search headings, the query may contain errors in spelling and/or errors in fact. If all the queries coming to the reference librarian were answerable by using query words as search headings in such easy-to-use tools as Who's Who in America he would not earn his keep. The fact is that reference librarians receive many problem queries that require considerable unscrambling. So here is some advice. If a personal name can't be found in an index, look for alternate spelling of the name. Blazek might be spelled Blasek by the patron. Walter Paul may turn out to be Paul Walter. Also be somewhat distrustful of dates, specifically in citations. A citation published in 1955 might in actuality have been published around 1955, like 1930.

Now let us turn to the use of subjects as search headings (subject headings) to answer providing tools. Subject headings as search headings to answer providing tools (as well as lead-in tools for that matter) present problems because the word or words that you want to search a given subject may not be the word or words that the cataloger or indexer chose to characterize the subject. Putting it differently, the vocabulary of the searcher is not always in coincidence with the vocabulary of the cataloger or indexer. Why is this so and what can we do about it? The why has already been alluded to. Natural language can be used to express the same thing in different ways. This is what poets thrive on but it is rough on reference librarians attempting to find the proper handle or search heading for a query. Also, the topic that you are seeking may be treated and/or indexed differently in different tools. This could be caused by the different amount of material about a topic in a given tool or by difference in indexing philosophy. At any rate, these are some of the causes of the problem. The solution to the problem of lack of coincidence between the vocabulary of the query and the vocabulary of the answer providing tool is to collect words and phrases that are likely to be search headings in the answer providing tools. These might be synonyms, more specific terms, more generic terms, or otherwise related terms. Examples of synonyms are teachers, instructors, professors, tutors. Strictly speaking, these are near synonyms since there is a difference in meaning among these terms but one typically not large enough to make a difference. There are, of course, exceptions - hence the qualifier "typically". Specific-generic relationship can be illustrated with the three level hierarchy: "documents", "books", and "texts".

In selecting a search heading to a lead-in tool or an answer providing tool, search the words used in the query first. This is the simplest way and if the answer is obtained in this way, fine. If the answer cannot be obtained in this way, select as potential search headings, synonyms, more specific terms, more generic terms, and terms otherwise related. The selection may be based on your memory or upon memory aids. A memory aid that you have probably already used is the subject authority list to the card catalog. This list gives you both synonymously, more specifically related terms, as well as otherwise related terms. Another memory aid is a thesaurus to an indexing service, such as the New York Times Index. Here again synonyms, more specific more generic, and otherwise related terms are listed, typically in both an alphabetical and a hierarchical arrangement. In using subject authority lists or thesauri, select as many terms related to your query as apply. These terms are the potential search headings for your query.

Questions for discussion:

1. Can a subject authority list or thesaurus for one tool be used for searching another tool?
2. At what point should one stop the collection and searching of additional search headings?
3. Can the collection of search headings be delegated to clerks?

Exercise:

Bring answers to search heading selection exercise (to be distributed separately) for class discussion.

VI. Answer selection

Objective: Selection of correct and complete answer to a query.

In the last stencil we talked abou the selection of the specific access point that will lead you to the page(s) with the answer in the answer providing tool. In this stencil we will discuss the selection of the complete and correct answer from the page(s) containing the answer. As in the other steps of the reference process, this may or may not be a difficult step. We will deal with the difficult cases, since you need no help on the others. First a few words about bibliographic citations. You need to record citations when they are the answer to a query as, for example, in queries for a few articles on a subject. You should also record the citations of the answer providing tools. In the example of the query for a few articles on a subject, this may be the Readers' Guide to Periodical Literature or another index to periodicals. In the case of a query for factual information, this would be the handbook or other reference tool from which the answer is selected. The record of the citation should be complete and unambiguous so that you or anybody else can get to the answer in the reference tool without difficulty. Completeness of bibliographic citation for a book typically consists of the author(s), the title, the place of publication, the publisher, the year of publication, the edition, the volume (in case of a multivolume set) and the specific page or pages on which the answer is contained. For journal articles, the complete citation consists of the author(s) of the article, the title of the article, the name of the journal, the volume, date of publication, and complete pagination. Complete and unambiguous citations may also require the series number for a journal, the issue number for a journal when each issue is paginated separately (otherwise there may be twelve pages numbered 21 in one year), and a section number in a book if the book is paginated by sections rather than continuously. Elements of biliographic citation for other types of publications will typically be similar to that for books or journal articles.

Now some points about completeness and correctness of answers other than citations. Queries for which the answer is a number or a series of numbers typically require the qualification of that number. For example, if you are asked to get the temperature of Tallahassee in the winter, "20" is an insufficient answer for several reasons. You need to indicate the unit of measurement, whether it is degree Celsius (°C) or Fahrenheit (°F). You have to say whether it is the high, low or average temperature, and you also should give the complete bibliographic citation to the page that contains the answer. A complete answer may also mean giving more information than was requested. For example, if the name of a manufacturer of flower pots in Miami, Florida is requested and there are three such manufacturers in that town, supply all three rather than one picked at random as the answer. What if there were 50 flower pot manufacturers in Miami, Florida? This is a query that would probably require negotiation so that an acceptable answer can be provided. Negotiation will be dealt with next. In requests for names of individuals or organizations, more than just the name is often provided as the answer even though only the name is requested. Experience has shown that patrons frequently want the addresses and the phone numbers even though they ask for names only in the original request. More often than not, it is more efficient in the long run to collect the complete information the first time you see it even though it was not so requested in the original query.

Questions for discussion:

1. What are arguments pro and con for letting the patron select the answer from the answer providing tool?
2. Are there occasions when you might not need to record the citation to the answer providing tool?
3. What are the elements of a complete bibliographic citation for a dissertation?

Exercise:

Bring answer to the answer selection exercise (to be distributed separately) for class discussion.

VII. Query Negotation

The objectives of reference service are to answer the real query and to do so accuretely, quickly, and efficiently. In this chapter we will deal with the identification of the real query. This is a key step in the reference process. To put it simply, unless we recognize and answer the patron's real query, we are not doing our job. For example, an initial query might be:

> I need to find out about Austria.

The real query, and the one that needs to be identified and then answered might be:

> In what year did Hitler's armies invade Austria?

The identification of the real query is probably the pivotal step in the reference process and one in which our professional training is put to test. We might even suggest that once the real query has been identified, the subsequent steps in the reference process can, in many cases, be delegated to sub-professional or clerical personnel.

Why and under what circumstances are we likely to get other than the real queries? Both theoreticians and practicing reference librarians have written about this problem. Taylor suggests that a patron with an information need goes through four separate and more or less distinct stages or phases in refining and changing his information need. First there is an actual but unexpressed need for information. It is a vague feeling of uneasiness that one should know something that one does not know. Taylor calls this the visceral need. This is followed by a conscious description of the information need. Next, this information need is translated into a formal statement, still for oneself. Finally, the information need becomes the query posed to the reference librarian, if that route is followed. Taylor calls this the compromised need since it may be modified by what the patron thinks the librarian can do for him.[1] We should point out that the patron may not wait until the fourth stage to come to the reference desk but may do so at an earlier stage. Mount, a science reference librarian, gives some of the reasons why the real query may not be stated to the reference librarian. It may be because the patron does not want to reveal the real query, because he lacks knowledge of the depth and quality of the library collection, because the patron lacks confidence in the reference librarian's ability or because the person is ill at ease in posing the query or in answering questions about the query.[2] There is another problem also stated by Taylor, It is very difficult to put into words what you do not know.[3]

---

[1] R. S. Taylor. The process of asking questions. Am. Doc.13:391-96 (1962).

[2] E. Mount. Communication barriers and the reference question. Spec. Lib. 57:575-78 (1966).

[3] R. S. Taylor. Question-negotiation and information seeking in libraries. Coll. Res. Lib. 29:178-94 (1968).

But getting a query that is not the real query is only one reason for query negotiation. There are other pitfalls that await the unwary reference librarian. He may receive queries that are unclear or ambiguous. He may also get queries that are stated incompletely and/or are unanswerable. These are types of queries that need to be negotiated before they can or should be answered. We might look at the different types of reference queries as a spectrum going from queries presented as complete, clear and unambiguous statements to the opposite at the other end of the spectrum. At one end of the spectrum, the query may be stated so completely that the answer is actually given. If a patron describes exactly what he wants he may actually describe the answer to his query. At the other end of the spectrum we have queries that cannot or should not be answered as asked. In this chapter we will deal with the difficult part of the reference query spectrum.

Let us now turn to the types of queries that require negotiation before the librarian begins a search. Other types of negotiation--during the post-search negotiation--will be discussed later in this chapter.

Table 1 lists clues for the identification of queries that are to be negotiated. These clues are phrased as questions that you should ask yourself about the query statement. If the answer to a question is "no" this is an indication that the query needs to be negotiated for the missing, ambiguous, or incomplete element identified by the question or because it is either not answerable in the library or because there is insufficient time to answer the query as stated. Each of these clues for identifying queries to be negotiated will now be discussed. After you finish this chapter you will be given an exercise in the identification of queries to be negotiated.

A. CLUES FOR THE IDENTIFICATION OF QUERIES TO BE NEGOTIATED

Table 5

Checklist for Identification of Negotiable Queries

1. Is this the real query?
2. Is the subject of the query recognized?
3. Is the query statement unambiguous and complete?
4. Is the amount of information wanted specified?
5. Is the desired level of answer specified?
6. Is the query answerable in time available to librarian?
7. Is the query answerable in the literature?
8. If there are potential constraints of language, time period, geography, or type of publication, are these constraints given?

1. The real query may not be asked

You can never be sure whether or not the real query is being asked but when a patron asks you where copies of the Reader's Guide are located, he may well want help in finding something that he thinks is in this reference tool. The query for the location of a specific title may thus be an indication that the real query has not been asked. You might handle this type of a query by pointing out the location of the requested reference tool and then asking whether the patron needs help in locating information in the tool. If the patron asks for help at this point, the real query can be discerned through negotiation. If he does not want help then the real query was strictly a location query.

Another indication that the query asked is not the real one is the very broadly (generically) phrased query. If someone asks for books on animals, that is a clue that he may not be telling you what he actually needs from the library. In this instance, you might want to point out that the library has more material on the subject than he is likely to be interested in and that you would be more helpful to him if he asked his query more specifically. It has been suggested by King that at this point the reference librarian engage the patron in a conversation (related to his information need) to find out more about what the patron actually wants.[4]

---

[4] G. B. King. The reference interview. RQ 12(2):157-60 (Winter, 1972).

2. Librarian is unfamiliar with subject of query.

You don't have to be familiar with nuclear physics to answer all queries about nuclear physics. You can answer queries about individuals, organizations, or bibliographic citations in the field of nuclear physics without knowing anything about this subject. But there are queries for which you have to know something about the subject field before answering them. Ask your patron for this information in the negotiation stage. If you are dealing with a surrogate patron, e.g., a secretary asking a query for her boss, look up the words in a dictionary or encyclopedia. You will have to determine for yourself whether you need to familiarize yourself with the subject of a query before answering it.

3. Ambiguity or incompleteness of query statement.

There may be words in the query statement that have several meanings. Does the patron mean by "library" an organized collection of books and other documents or does he mean a list of available computer programs? If a term in a given query statement has several possible meanings, it needs to be disambiguated. Sometimes combinations of terms are stated ambiguously. Does "chemical reactions of acids and bases" mean reactions with each other or does it mean reactions of acids and reactions of bases? This type of ambiguity also has to be clarified by asking the patron to define words or phrases in the query statement.

Negotiation might be required because what is wanted about a subject is not clear. A query in which the wanted descriptor is either missing or stated to generally falls in this category. For example, a query stated as "I want to know about electron microscopes" would have to be negotiated for a specific wanted descriptor. Do you want to know how they work? What they look like? Who uses them? At the initial stage of negotiation, this might best be phrased in an open-ended fashion. What do you want to know about this subject?

4. Amount of information needed is not specified.

Queries for other than factual information and verification of bibliographic citations may have answers of varying sizes. For example, a query for background information might be answered with one document or with a large number of documents. A request for a bibliography on a subject may also have a wide range of number of citations as answers. When the approximate number of desired documents or citations is not specified by the patron, this should be asked in the negotiation step.

5. Level of answer is not specified.

Queries for other than factual information and verification of bibliographic citations may have different and potentially acceptable answers for patrons with different levels of training and/or interests. Requests for background information are particularly dependent on level of training. Find out whether the answer is for a specialist in the field, a specialist in another field, a layman with a good liberal education, or a layman with relatively little formal education. Be sure to be tactful in inquiring about the patron's background on a particular subject. This may be a sensitive point.

6. The query takes more time than you can spend on it.

Let's say that your patron wants the names of current state librarians that are women, have one child, and have obtained their initial library school degrees south of the Mason-Dixon line. This is an answerable query but one that is difficult and time consuming to search. Chances are that you cannot afford to spend the time required for answering this query. You have to negotiate it to an alternate and answerable-within-alloted-time query. Perhaps you can provide part of the answer, e.g., a list of state librarians, with the patron completing the request himself.

7. Answer to query is not recorded in the literature.

There are at least two types of queries that fall into this category: queries for confidential information and queries about future events. Trade secrets, e.g., the formula for making Coca Cola, and requests for security classified government information, are examples of queries for confidential information. When this fact is recognized, the query should be negotiated into answerable form by, say, asking whether non-confidential information about the subject might be an acceptable alternate answer. Examples of queries about future events that require negotiation are queries for future petroleum production or consumption figures and the name of the senator from Wisconsin ten years from today. The correct answer to these queries is that we do not know. To provide full information service a librarian should attempt to negotiate these queries so that acceptable answers to alternate queries can be obtained. Queries about future events might be converted from factual answers to speculative answers (estimates and predictions).

8. Language, time period, geography, or type of publication constraints need to be added to query statement.

The subject of the query may be stated accurately and completely but the number of potentially relevant answers (documents or citations) may be too large for the patron to read or the reference librarian to collect. When this is the case, ask the patron whether the query can be narrowed by adding language, time period, geography, or type of publication constraints. This type of negotiation is typically used for requests for background information or bibliographies. For example, requests for citations by a prolific author might be made more manageable in this way. Subject requests on topics for which there are too many references might also be negotiated by language, e.g., English only, time period, e.g., during the last five years only, geography, only in the U. S., or type of publication, e.g., journal articles only. This will help both in satisfying the patron (too much information may be equally unacceptable as not enough information) and may make the request for information answerable in the time available.

B. DURING AND POST-SEARCH NEGOTIATION

All of the negotiations listed previously should be conducted before the start of the search. It will save time in the long run if the right query is identified at the beginning. Despite query negotiation before starting the search, the search may result in an unacceptable answer or in no answer. Also, there may be instances when either too many or not enough answers are found during the course of the search. This points to the fact that negotiation may be necessary during the course of the search or when the search has been completed.

Three cases which may require during and post-search negotiation occur when the query is not searchable at its given specificity, when the answer is not recorded in the literature, and when the query statement contains inaccuracies. It should be pointed out that while these types of negotiation commonly occur during a search or after its completion, they may also be necessary in the pre-search stages of some queries.

C. NEGOTIATION TECHNIQUES

The questions listed in Table 1--Checklist for Identification of Negotiable Queries, are questions which you should ask yourself about the patron's query statement.

If the answer to a numbered question is "no," it is a clue that you have identified missing or ambiguous information which needs to be obtained or disambiguated.
Obtaining needed information about the query is what query negotiation is all about.

The numbered questions aid in identifying queries which require negotiation, but in working with individual patrons you will need to rephrase the question to meet each particular situation. Remember that people vary in sensitivity to being questioned. Try to be interested, helpful without being nosy. In other words, be tactful. This is easier said than done. By developing these skills in a practice situation, you will be better prepared on the job.

While each patron must be treated individually, the following general techniques have been identified which can help you make the patron feel at ease and aid you in fully negotiating the query. These points are summarized in Table 2--Checklist for Evaluating Negotiation.

Open and Closed Questions

King has suggested that in the initial stages of negotiation the reference librarian use open questions to encourage the patron to discuss his information needs. An open question cannot be answered with simply a "yes" or "no." Instead, the response is left up to the patron. Open questions typically begin with such words as what, when, how, who or where.

Example:

Query:	"I would like some information on hair dryers."
Negotiation Question:	"What would you like to know about hair dryers?"

This open-ended question will not lead the patron, but will allow him to further elaborate on his needs. A closed negotiation question such as "Do you want books or journal articles?" tends to prematurely restrict the patron's explanation of his request. The result may be that the librarian answers a query other than the real one.

In the final stages of negotiation, when you have learned as much as necessary about the patron's information need through asking open-ended questions, you can employ closed questions to attempt to coordinate the request with your library's organization of information. Closed questions will aid in determining such elements as the amount of information needed or the form in which the patron wants it. Closed questions are questions which may be answered with "yes" or "no," or which offer a choice between possibilities.

Examples:

"Would you prefer a biography?" (Yes or No);
"Would you like to see an annotation or the article itself?" (Choice between possibilities).

Listening and Summarizing

In negotiation, the librarian should encourage the patron to do most of the talking and to set the direction of the preliminary discussion. Penland suggests that the librarian listen as long as possible without interrupting the patron, and try not to rush the pace of the interview.[5] Genuine listening involves not only concentrating on what is being said, but also being alert to the tone of conversation, expressions, gestures. It can also be helpful to restate what the patron tells you. Peck suggests summarizing or paraphrasing the patron's query as a way to insure mutual understanding and to help a librarian focus upon the exact query.[6]

Nonverbal Communication

In addition to being alert to the nonverbal clues projected by the patron, you should insure that the nonverbal clues you project are positive ones. You should attempt to communicate friendliness, alertness, and interest to the patron nonverbally as well as verbally. Establishing eye contact helps to signal to the patron that you are listening to him. Nodding your head to indicate you understand what he is saying can encourage him to talk and help him to feel at ease. Your hands can also show your attention. If you stop typing but do not take your hands off the typewriter keys, or if you continue to shuffle through the catalog cards you were working with when approached, the patron feels he does not have your complete attention or that he is keeping you from more "important" tasks.

---

[5] P. R. Penland. The interview as communication. Library Occurrent 24 (May, 1974), 422-24.

[6] T. P. Pack. Counseling skills applied to reference services. RQ 14 (Spring, 1975), 233-35.

Examples of Negotation Questions

Each librarian develops an individual approach to questioning the patron in negotiation, and no one way of phrasing can be pinpointed as best for use by all librarians. The following examples illustrates possible ways of questioning a patron to clarify a query which has been identified as negotiable through use of Table 1.

Is this the real query?

"Here is the publication that you requested. May I help you to locate any particular information in it?"

Is the subject of the query recognized?

"I am not familiar with the subject of your query. Can you help me by telling me a bit about it?"

Ambiguity in query statement?

"There is a word in your query that may have more than one meaning. Could you tell me which meaning you have in mind?"

Amount of information specified?

"About how many publications would you like on this subject?"

Level of answer specified?

"We have publications on this subject written for different audiences. Would you like something written for a subject specialist, a layman, or perhaps someone with a special need?"

Query answerable in time available?

"I am afraid that I cannot spend as much time on your query as would be required. We can do one or two things. I can answer your query in part for you and suggest how you might complete the job. Or, we can modify your query so that it can be answered in the time available."

Questions for discussion

1. What are clues that you are not getting the real query and what questions would you ask to get at the real query?
2. What types of queries cannot be answered in the literature?
3. Are there queries that might be answered in the literature but that are better answered in some other way?
4. What types of queries are likely to require more time to answer than reference librarians have available? How would you negotiate such queries?
5. How would you negotiate a query on a subject unfamiliar to you?
6. What would you do if a patron refuses to negotiate a query?

There are two exercises with this chapter. The first exercise lists queries that are to be negotiated as well as queries that can be answered without negotiation. Students are asked to identify queries to be negotiated and indicate reasons for negotiation. The second exercise is intended to give students practice in query negotiation.

TABLE 6

CHECKLIST FOR EVALUATING NEGOTIATION

Good Negotiation

_____Librarian uses open questions in the initial stages of negotiation.

_____Encourages patron to discuss his information needs.

_____Summarizes or paraphrases the patron's query to insure mutual understanding.

_____Makes eye contact with patron.

_____Gives patron full attention.

_____Remains objective about the content of the query.

_____Attempts to make patron feel at ease.

_____Follows the patron's train of thought.

_____Shows empathy for the patron.

_____Is aware of nonverbal clues.

Poor Negotiation

_____Librarian interrupts patron as he attempts to discuss his information needs.

_____Uses closed questions too early in the interview.

_____Doesn't give patron full attention.

_____Reacts subjectively to the content of the query.

_____Is too quick to state that the query cannot be answered.

_____Provides an answer to the query prematurely without thorough consideration.

_____Places patron on the defensive.

_____Exhibits uneasiness in working with patrons.

Appendix B

EXERCISES TO BE USED WITH
THE REFERENCE PROCESS

Florida State University

January, 1976

TABLE OF CONTENTS

EXERCISES TO BE USED WITH THE REFERENCE PROCESS TEXT

MODULES II AND III	Message selection and selection of types of answer providing tools. Tables 2, 3, 4.
MODULE IV	Selection of specific answer providing titles.
MODULE V	Selection of search headings.
MODULE VI	Answer selection.
MODULE VII	Query Negotiation. Identification of queries to be negotiated. Practice in Query Negotiation.

Florida State University
January, 1976

2

TABLE 2

CHECKLIST OF WANTEDS, KNOWNS AND MODIFIERS

WANTEDS (TYPES OF EXPECTED ANSWERS)

1. Dates (specific dates)
2. Events (involving people)
3. Illustrations

4. Numeric information
   a. properties (scientifically measured)
   b. statistics (involves counting) and other
5. Organizations
6. Persons
7. Addresses and general locations
8. Publications
   a. citations (including bibliographies)
   b. document locations
   d. verification or completion of bibliographic data
9. Terms or subjects
   a. abbreviations
   b. words, phrases, definitions
   c. abstracts, annotations, recommendation of publications
   d. general or background information
10. Unspecified or other (list particular wanted)

KNOWNS (TYPES OF ACCESS POINTS)

12. Abbreviations
13. Dates (specific dates)
14. Events (involving people)
15. Illustrations

16. Organizations (specifically named; includes corporate authors)
17. Persons (specifically named; includes authors)
18. Places
19. Terms or subjects (other than specific types already listed)
20. Titles of publications (specifically names)
21. Unspecified or other (list particular known)

TYPES OF MODIFIERS

22. Academic discipline
23. Amount of expected information
24. Foreign language
25. Level of information
26. Place
27. Time period
28. Type of publication

FOR EACH APPLICABLE TYPE OF MODIFIER SELECT ONE OF THE FOLLOWING QUALIFIERS:

a. Applicable and stated in query (list the particular modifier)
b. Applicable but not stated in query (reason for negotiation)

TABLE 3

TYPES OF ANSWER-PROVIDING TOOLS

A	Atlases, Maps
B	Biographical sources
C	Card catalogs, union lists
D	Dictionaries
E	Encyclopedias
G	Guides to the literature
H	Handbooks, manuals, and almanacs
I	Indexes, bibliographies, and abstracts
M	Monographs, texts
N	Non-biographical directories
P	Primary publications. This includes dissertations, reports, primary journals and conference proceedings.
Y	Yearbooks

TABLE 4
Tool Descriptor Matrix

REVISED 12-75

WANTEDS KNOWNS	Dates 1.	Events 2.	Illustrations 3.	Properties 4a.	Statistics 4b.	Organizations 5.	Persons 6.	Addresses, locations 7.	Citations 8a.	Document locations 8b.	Verification of publications 8d.	Abbreviations 9a.	Words, phrases, definitions 9b.	Abstracts, annotations, recommendations of publications 9c.	General information 9d.	Unspecified or other 10.	
12. Abbreviations						D							D				12.
13. Dates		HM Y				Y	Y		I		I		Y	I	HM Y		13.
14. Events	EH M		AE MY		EHM Y	EM	EH MY	EH MY	CI				EH MY	I	EM P		14.
15. Illustrations				H	H								H		H		15.
16. Organizations	EH M	EN Y	E MP		NE	N	EMN	EG HN	CI	C	CI	D N		GI	EH NP		16.
17. Persons	BDE H	BD EH	BE MY	BE HY	BE HY	BE	BEM	AB EM	BC I	C	CI		BD E	GI	BEM PY		17.
18. Places	EHM	EH MY	AE HM	AD EH	AD EH	N	AE	AD EH	CI	C		D	D	I	AE HM		18.
19. Terms or subjects	DE HM	EM	AD EHM	DE H	EH NY	N	BE Y	E	CG I	C	CI	DE	DE H	GI	EH M		19.
20. Titles					I N P				CG I	C	CI P	I		GIN P	EG IP		20.
21. Unspecified																	21.
	1.	2.	3.	4a.	4b.	5.	6.	7.	8a.	8b.	8d.	9a.	9b.	9c.	9d.	10.	

Exercises for modules II and III.

Message selection and selection of types of answer providing tools.

For the attached 40 queries perform the following 4 exercises:

Exercise #1. Selection of what is wanted and what is known (given) in query statement.

Exercise #2. Selection of wanted descriptor and known descriptor for each query statement using the list of wanted and known descriptors given in text.

Exercise #3. Selection of modifiers for each of the 40 queries using the list of modifiers given in text.

Exercise #4. Selection of answer providing tools for each of the 40 queries using the matrix in text.

Worked out examples for exercises:

Exercise #1. Example:

	What is known	What is wanted				
A. Who invented the steam engine?	steam engine	who invented (inventor)				

Exercise #2. Example:

	What is known	What is wanted	K	W		
B. When was the American Library Association Founded?	Amer. Library Assoc.	When founded	16	1		

Exercise #3. Example:

	What is known	What is wanted	K	W	M	
C. What is the full name of the KGB? It operates in the U.S.S.R.	KGB	Full name	12	5	26	

Exercise #4. Example:

	What is known	What is wanted	K	W	M	Types of tools
D. What country produced the largest amount of nickel in 1972? It is a South American country.	largest amt. of nickel	What country	19	7	26 27	E

List of 40 query statements and answer sheet for Modules II and III exercises

Query Statements	Answers					
	What is known	What is wanted	K	W	M	Types of answer-providing tools
1. What is the address of the American Chemical Society?						
2. I need the author of a recent article called "Peat Moss, a Natural Absorbent for Oil Spills."						
3. What would be a good index to check in marine biology?						
4. Where can I find a simple explanation on the use of a slide rule?						
5. When was television invented?						
6. Do you have any recent journal articles on solar energy for a paper that I have to write in a high school class?						
7. Where can I find a picture of Joseph Sabine, the discoverer of the polio vaccine?						
8. What is the circulation of the journal, Scientific American?						
9. Who is the current president of the American Psychological Association?						

10. Where are the headquarters of the American Psychological Association?

11. Do you have any maps of New York City dating about 1880?

12. What is a coluga, believed to be a mammal?

13. I need some citations to write a short paper on Otto Hahn, a recent German physicist.

14. What was the cost per ounce of gold in London in 1972?

15. What is the area of Lake Minnesota in Wisconsin?

16. I would like to know the boiling point of ethyl alcohol.

17. What is the common name for naja naja? It is a snake.

18. How many hand guns were manufactured in the U.S. in 1973?

19. What is a good text on the study of molds and mushrooms? I am a housewife without a science background.

∞

20. How many tons of bituminous coal were mined in Kentucky in 1971? ________ ________ ___ ___ ______ ________

21. Where can I find a biographic sketch on Isaac Azimov, a popular American science writer? He's still living. ________ ________ ___ ___ ______ ________

22. What does MANIAC stand for? ________ ________ ___ ___ ______ ________

23. What is the acronym for Gross National Product? ________ ________ ___ ___ ______ ________

24. Supply a picture of the Empire State Building. ________ ________ ___ ___ ______ ________

25. What holiday is celebrated in France on July 14? ________ ________ ___ ___ ______ ________

26. I would like a map of Austria published in 1919. ________ ________ ___ ___ ______ ________

27. Where can I find symbols used in astronomy? ________ ________ ___ ___ ______ ________

28. What is the price of the paperback edition of Fear of Flying? ________ ________ ___ ___ ______ ________

29. What organizations did Robert Lunz belong to? He was a marine biologist from South Carolina and he died about five years ago. ________ ________ ___ ___ ______ ________

30. Where can I get a copy of the August, 1958 issue of the Torrey Botanical Review? ________ ________ ___ ___ ______ ________

31. Where can I find a summary of the book *North With the Spring*?

32. What is the Paris home address of Christian Dior?

33. Who won the Nobel Prize in Psychology in 1974?

34. Where can I find a select bibliography on the writings of Jack London? This is to be used for an undergraduate term paper.

35. How much should a six month old Holstein cow weigh?

36. When was Jean Renior, the French painter, born?

37. What is another name for the circle of confusion? It deals with mathematics.

38. How many four-year colleges are there in Maryland?

39. I need to find a specific article on patina formation of copper alloys. I think it came out in 1973.

40. In what city is the Folger Library?

IV SELECTION OF SPECIFIC ANSWER PROVIDING TITLES

EXERCISE #1

Reason for assignment: In any given query you should be able to describe the tool which will answer that query (i.e. assign a type of tool to that query). The next step is to select a particular title. This can be done by browsing in the collection and by the use of lead-in tools: the card catalog, guides to the literature, and bibliographies of types of tools. This exercise is designed to give you practice in using lead-in tools.

Instructions: For each of the queries furnished you will be given a description of the type of answer providing tool needed. You will need to determine which lead- tool (listed below) you will use to find the answer providing title. You will then need to go to that lead-in tool, decide on the subject heading, find an answer providing title, and note the page of the lead-in tool on which it appears. For the tools used, furnish just the author and title. (Do not attempt to answer the queries since some of them are unanswerable.)

Example

Query: What is the scientific name of the Swan River daisy of Australia?
Type of tool: Dictionary. Subject: Botany. Place: Australia.
Lead-in tool: Walford, A.J. Guide to Reference Materials.
Subject heading: Botany
Answer providing tool: Burbidge, F. Dictionary of Australian Plant Names.
Page: 215

LEAD-IN TOOLS

1. Card catalog (the main catalog on the first floor of Strozier Library).
2. Klein, Bernard. Guide to American Scientific and Technical Directories. Rye, N. B. Klein, 1972. (Sci Z7914 M3 K53). At Sci/Tech reference desk.
3. McGraw-Hill Basic Bibliography of Science and Technology. N.Y.: McGraw-Hill, 1966. (MC R 016.5 M).
4. Slocum, Robert B. Biographical Dictionaries and Related Works. 1st supp. Detroit: Gale, 1972. (MC R 016.92 S6345 Supp. 1972).
5. Standard Periodical Directory. N.Y.: Oxbridge, 1970. 3d ed. (MC R 016.05 S).

10

IV SELECTION OF SPECIFIC ANSWER PROVIDING TITLES

6. UNESCO. Bibliography of Interlingual Scientific and Technical Dictionaries. Paris: UNESCO, 1953. (Sci Z7405 D5 U45).

7. Walford, A.J. Guide to Reference Materials. 3rd ed. vol. 1, Science and Technology. London: Library Association, 1973. (MC R 016 W174g 1973).

8. Wasserman, Paul. Statistics Sources. 4th ed. Detroit: Gale, 1974. (MC R 016.31 S797 1974).

9. Winchell, Constance M. Guide to Reference Books. 8th ed. Chicago: ALA, 1967. (MC reserve). Disregard supplements.

IV SELECTION OF SPECIFIC ANSWER PROVIDING TITLES

QUERIES

1. Where can I find some abstracts of articles on using plants of the Aristolochia family in gardening?
   Type of tool: Abstract; Subject: gardening.

2. What was the butter production in Sweden in 1970?
   Type of tool: Handbook; Place: Sweden; Subject: agriculture.

3. Where can I find a lengthy review of the potential barrier?
   Type of tool: probably text or monograph; Subject: nuclear physics; Amount of information: lengthy.

4. Where can I find a current list of the accredited colleges of pharmacy in the U.S. (i.e. those accredited by the American Council on Pharmaceutical Education)?
   Type of tool: Directory; Place: U.S.; Time: Current; Subject: pharmaceutical education.

5. Does Strozier Library have a book showing tables used in chromatographic analysis?
   Type of tool: Handbook; Subject: chromatographic analysis.

6. What does this Latvian term mean? It deals with birds and I could not find it in a general Latvian-English dictionary.
   Type of tool: Dictionary; Subject: birds; Place: Latvia.

7. Where can I find a good long review of hydrophones?
   Type of tool: probably text or monograph; Subject: acoustics; Amount of information: lengthy.

8. Where can I find a mid-nineteenth century (in the time of Dickens) English recipe for plum pudding?
   Type of tool: Handbook; Subject: cookery; Time: mid 19th century; Place: England.

9. Where can I find a list of Dutch bee-keeping terms?
   Type of tool: Dictionary; Place: Netherlands; Subject: agriculture (bees)

10. Where can I find the address of K.N. Sokola, a contemporary astronomer? I do not know his nationality.
    Type of tool: Directory; Time: contemporary; Subject: astronomy.

11. Where can I find some current news of developments in Hawaiian shipping?
    Type of tool: Serial; Subject: shipping; Place: Hawaii.

12. What were the leading counties in the U.S. for the mining of fluorspar in 1970?
    Type of tool: Handbook; Place: U.S.; Subject: mining; Time: 1970.

12

IV SELECTION OF SPECIFIC ANSWER PROVIDING TITLES

13. Where can I find some brief information about the O.S. Rigg firm? It is a very small firm engaged in die casting in the U.S.
    Type of tool: Directory; Subject: mechanical engineering (die casting); Amount of information: brief; Place: U.S.

14. Where can I find a brief biography of Pablo Hervas, a contemporary Bolivian geologist? It can be either in Spanish or English.
    Type of tool: Biographical source; Place: South America; Time: contemporary; Subject: geology.

15. Where can I find a bibliography of airport engineering of the 1950's in France?
    Type of tool: Bibliography; Subject: airport engineering; Place: France; Time: 1950's.

MODULE V: SELECTION OF SEARCH HEADINGS

Query: I need some material on techniques of coping with emotionally disturbed children in confrontation situations.

Circle the appropriate subject headings in this list. Assume the search is to be as complete as possible and all relevant documents are to be retrieved.

- Emotional development
    - Research
- Emotional problems
- Emotional stability
- Emotionally disturbed
    - Behavior
    - Care and treatment
    - Diagnosis
    - Education
    - Health and hygiene
    - Rehabilitation
    - Schools and institutions
- Emotionally disturbed, Parents of the
- Emotionally disturbed, Teachers of the
    - Duties
    - Personality
    - Rating
- Emotionally disturbed children
    - Adjustment
    - Behavior
    - Care and treatment
    - Case studies
    - Diagnosis
    - Education
- Emotions
- Emotions and learning
- Empathy

14

MODULE V: SELECTION OF SEARCH HEADINGS

Query: I'm looking for monographs on the evaluation of faculty members in institutions of higher education.

Circle the appropriate subject headings in this list. Assume the search is to be as complete as possible and all relevant documents are to be retrieved.

- College students
  - *See* Students
- **College teachers**
    - Universities and colleges – Faculty
    - Women as college teachers
    - Faculty (Education)
    - Instructors
    - Professors
    - Universities and colleges – Teachers
    - University teachers
    - Teachers
    - Universities and colleges – Faculty
  - – Leaves of absence
    - Sabbatical leave
  - – Legal status, laws, etc. *(Direct)*
  - – Salaries, pensions, etc. *(LB2334)*
  - – Taxation *(Direct)*
  - – Tenure *(Direct)*
  - – Work load *(LB2331)*
    - Faculty work load
- **College teachers, Part-time**
    - Part-time college teachers
    - Teachers, Part-time
- **College teachers, Rating of**
- **College teachers, Training of** *(Indirect)*
    - Teachers, Training of
- **College teaching** *(LB2331)*
    - University teaching
    - Teaching
  - – Vocational guidance
    - *See* College teaching as a profession
- **College teaching as a profession**
    - College teaching – Vocational guidance
    - University teaching as a profession
    - Teaching as a profession

MODULE V: SELECTION OF SEARCH HEADINGS

Query: Do you have any material on terminating employment?

Circle the appropriate subject headings in this list. Assume the search is to be as complete as possible and all relevant documents are to be retrieved.

Employees, Dismissal of *(Direct) (HD7813)*
Employees, Reinstatement of
Employees, Suspension of
Layoff systems
Teachers – Tenure
Temporary employment
Wages – Dismissal wage
Dismissal of employees
Notice of dismissal
Labor and laboring classes
Labor contract
Labor laws and legislation
Master and servant
Personnel management
Temporary employment
Wages – Dismissal wage
– Anecdotes, facetiae, satire, etc.
Employees, Identification of
See Labor passports
Employees, Probationary *(Direct)*
Probationary employees
Labor and laboring classes
Labor contract
Employees, Rating of *(T60.R)*
Ability – Testing
Executives, Rating of
Performance standards
Supervisors, Rating of
Teachers, Rating of
Efficiency rating
Performance rating (of employees)
Rating of employees
Service rating
Ability – Testing
Labor and laboring classes
Personnel management
Teachers, Rating of
– Terminology
Employees, Recruiting of
See Recruiting of employees
Employees, Reinstatement of *(Direct)*
Reinstatement of employees
Employees, Dismissal of
Labor contract
Personnel management

Employees, Relocation of *(Direct)*
Here are entered works on the transfer of employees by their companies to another geographical location. Works on the transfer of employees from one department or position to another within the same company, within the same geographical location are entered under Employees, Transfer of.
Employees, Transfer of

Labor mobility
Personnel management
Note under Employees, Transfer of
Employees, Reporting to
Bulletin boards
Employees' magazines, handbooks, etc.
Reporting to employees
Communication in management
Industrial relations
Personnel management
Employees, Resignation of *(Direct)*
Quits
Resignation of employees
Labor contract
Labor mobility
Labor turnover
Employees, Supervision of
See Supervision of employees
Employees, Suspension of *(Direct)*
Suspension of employees
Employees, Dismissal of
Labor contract
Labor laws and legislation
Master and servant
Personnel management
Employees, Training of *(HF5549.5.T7; T58)*
Works on employee training in specific industries, etc. have duplicate entry under the name of the industry, etc.
Apprentices
Employee induction
Employee training directors
Executives, Training of
Industrial tours
Interns (Civil service)
Learners, Industrial
Moving-pictures in industry
Technical education
Training manuals
In-service training
Training of employees
Training within industry
Vestibule schools
Apprentices
Personnel management
Technical education
Vocational education
– Law and legislation *(Direct)*
Employees, Transfer of *(Direct)*
Here are entered works on the transfer of employees from one department or position to another within the same company, within the same geographical location. Works dealing with the transfer of employees by their companies to another geographical location are entered under Employees, Relocation of.
Employees, Relocation of
Transfer of employees
Employees, Relocation of
Personnel management
Note under Employees, Relocation of
Employees' buildings and facilities *(NA6598)*
Restaurants, lunch rooms, etc.
Buildings, Employees'
Community centers for employees
Employees' service buildings
Personnel buildings
Service buildings, Employees'
Welfare buildings in industry
Factories
Industrial buildings
Office buildings
Welfare work in industry

See Copyright, Employees'
Employees' handbooks
See Employees' magazines, han
etc.
Employees' inventions
See Inventions, Employees'
Employees' magazines, handbooks
(Direct)
Here are entered works devoted exc
mainly to employees' affairs and
Works treating of the history,
preparation, value, etc. of
publications published by
business concerns to d
information promoting their int
success are entered under th
House organs.
Company magazines
Company publications
Employees' handbooks
Employees' manuals
Factory press
House organs, Interior
Shop papers
Employees, Reporting to
Industrial relations
Journalism, Technical
Labor and laboring classes – Periodicals
Personnel management
Note under House organs
Employees' manuals
See Employees' magazines, han
etc.
Employees' representation in man
(Direct) (HD5650-5659)
Collective bargaining
Company unions
Employee ownership
Shop stewards
Works councils
Codetermination (Industria
relations)
Labor representation in reg
of industry
Management, Employees' representation in
Collective bargaining
Industrial relations
Industry
Labor and laboring classes
Example under Industrial relat
Employees' service buildings
See Employees' buildings and f
Employees' vacations
See Vacations, Employee
Employer-employee relations
See Industrial relations
Employer identification numbers *(Direct)*
Tax administration and pro
Employers' associations *(Indirec*
(HD6350-6940)
Gilds
Trade and professional associations
Associations, Employers'
Gilds
Societies
Trade and professional associations
Employers' liability *(Direct) (H*
7816)
Factories – Safety applianc
Factory inspection
Independent contractors

MODULE V: SELECTION OF SEARCH HEADINGS

Query: Can you help me locate articles on miscarriages?

Circle the appropriate subject headings in this list. Assume that all relevant documents are to be retrieved and the search is to be as complete as possible.

ABORTION (G6)

ABORTION, CRIMINAL (I)

ABORTION, HABITUAL (C6)

ABORTION, INDUCED (E4)

ABORTION, INFECTIOUS see BRUCELLOSIS, BOVINE (C1, C15)

ABORTION, LEGAL (E4)
XR POPULATION CONTROL (I)

ABORTION, MISSED (C6)

ABORTION, SEPTIC (C1, C6)

ABORTION, THERAPEUTIC (E4)

ABORTION, THREATENED (C6)

CONTRACEPTION (E2)
see also related
FAMILY PLANNING (N2)

XR FAMILY PLANNING (N2)

CONTRACEPTIVE AGENTS (D13)

CONTRACEPTIVE DEVICES (E2)

CONTRACEPTIVE DEVICES, INTRAUTERINE see INTRAUTERINE DEVICES (E2)

CONTRACEPTIVES, ORAL (D8, D13)

CONTRACEPTIVES, POSTCOITAL (D8, D13)
X POSTCOITAL CONTRACEPTIVES (D8,D13)
XU MORNING AFTER PILL (D8,D13)

FAMILY PLANNING (N2)
see also related
CONTRACEPTION (E2)

X PLANNED PARENTHOOD (N2)
XU BIRTH CONTROL (N2)
XR CONTRACEPTION (E2)
XR POPULATION CONTROL (I, N1)

PREGNANCY (G1)
see also related
PRENATAL CARE (E2, N2)
PSEUDOPREGNANCY (G1)

PREGNANCY, ABDOMINAL (C6)

PREGNANCY, ANIMAL (G1)
see also related
ANIMALS, NEWBORN (B2)

PREGNANCY COMPLICATIONS (C6)
see also related
PREGNANCY, PROLONGED (G1)

XR OBSTETRICS (G2)

PREGNANCY COMPLICATIONS, CARDIOVASCULAR (C6, C8)

PREGNANCY COMPLICATIONS, HEMATOLOGIC (C6, C9)

PREGNANCY COMPLICATIONS, INFECTIOUS (C1, C6)

PREGNANCY, ECTOPIC (C6)

PREGNANCY IN DIABETES (C6, C7, C13)

PREGNANCY, MULTIPLE (G1)

PREGNANCY, PROLONGED (G1)
XR PREGNANCY COMPLICATIONS (C6)

PREGNANCY TESTS (E1)

PREGNANCY TESTS, IMMUNOLOGIC (E1)
XR IMMUNOLOGIC TECHNICS (E5)

PREGNANCY TOXEMIAS (C6)
XU PRE-ECLAMPSIA (C6)
XR TOXEMIA (C1)

PREGNANCY, TUBAL (C6)

LEGEND:
x=see
xu=see under
xr=see also related

MODULE V: SELECTION OF SEARCH HEADINGS

Query: I would like to see some recent articles on "the pill."

Circle the appropriate subject headings in this list. Assume that all relevant documents are to be retrieved and the search is to be as complete as possible.

ABORTION (G6)

ABORTION, CRIMINAL (I)

ABORTION, HABITUAL (C6)

ABORTION, INDUCED (E4)

ABORTION, INFECTIOUS see BRUCELLOSIS,
BOVINE (C1, C15)

ABORTION, LEGAL (E4)
XR POPULATION CONTROL (I)

ABORTION, MISSED (C6)

ABORTION, SEPTIC (C1, C6)

ABORTION, THERAPEUTIC (E4)

ABORTION, THREATENED (C6)

CONTRACEPTION (E2)
see also related
FAMILY PLANNING (N2)

XR FAMILY PLANNING (N2)

CONTRACEPTIVE AGENTS (D13)

CONTRACEPTIVE DEVICES (E2)

CONTRACEPTIVE DEVICES, INTRAUTERINE see
INTRAUTERINE DEVICES (E2)

CONTRACEPTIVES, ORAL (D8, D13)

CONTRACEPTIVES, POSTCOITAL (D8, D13)
X POSTCOITAL CONTRACEPTIVES (D8,D13)
XU MORNING AFTER PILL (D8,D13)

FAMILY PLANNING (N2)
see also related
CONTRACEPTION (E2)

X PLANNED PARENTHOOD (N2)
XU BIRTH CONTROL (N2)
XR CONTRACEPTION (E2)
XR POPULATION CONTROL (I, N1)

PREGNANCY (G1)
see also related
PRENATAL CARE (E2, N2)

PSEUDOPREGNANCY (G1)

PREGNANCY, ABDOMINAL (C6)

PREGNANCY, ANIMAL (G1)
see also related
ANIMALS, NEWBORN (B2)

PREGNANCY COMPLICATIONS (C6)
see also related
PREGNANCY, PROLONGED (G1)

XR OBSTETRICS (G2)

PREGNANCY COMPLICATIONS, CARDIOVASCULAR (C6, C8)

PREGNANCY COMPLICATIONS, HEMATOLOGIC (C6, C9)

PREGNANCY COMPLICATIONS, INFECTIOUS (C1, C6)

PREGNANCY, ECTOPIC (C6)

PREGNANCY IN DIABETES (C6, C7, C13)

PREGNANCY, MULTIPLE (G1)

PREGNANCY, PROLONGED (G1)
XR PREGNANCY COMPLICATIONS (C6)

PREGNANCY TESTS (E1)

PREGNANCY TESTS, IMMUNOLOGIC (E1)
XR IMMUNOLOGIC TECHNICS (E5)

PREGNANCY TOXEMIAS (C6)
XU PRE-ECLAMPSIA (C6)
XR TOXEMIA (C1)

PREGNANCY, TUBAL (C6)

LEGEND:
x=see
xu=see under
xr=see also related

MODULE V: SELECTION OF SEARCH HEADINGS

Query: What material is available on the Gullah dialect? It is spoken by the isolated Afro-American people living in the Sea Islands and tidewater areas of South Carolina and Georgia.

Circle the appropriate subject headings in this list. Assume that all relevant documents are to be retrieved and the search is to be as complete as possible.

- **SOCIOLINGUISTICS** 290
  - Bilingualism
  - Language Planning
  - Multilingualism
  - Linguistics
  - Dialect Studies
  - Diglossia
  - Idioms
  - Language Role
  - Language Standardization
  - Linguistic Theory
  - Mutual Intelligibility
  - Native Speakers
  - Nonstandard Dialects
  - Official Languages
  - Psycholinguistics
  - Regional Dialects
  - Social Dialects
  - Sociocultural Patterns
  - Socioeconomic Status
  - Sociology
  - Standard Spoken Usage
  - TENL
- **SOCIOLOGICAL NOVELS** 260
  - Novels
  - Fiction
  - Literature
  - Prose
  - Social Values
- **SOCIOLOGY** 490
  - Educational Sociology
  - Human Dignity
  - Behavioral Sciences
  - Social Sciences
  - Area Studies
  - Authoritarianism
  - Behavior
  - Cross Cultural Studies
  - Ethnology
  - Social Factors
  - Social Psychology
  - Social Reinforcement
  - Sociocultural Patterns
  - Sociolinguistics
- **SOCIOMETRIC TECHNIQUES** 190
  - Measurement Techniques
  - Behavior
  - Group Dynamics
  - Group Relations
  - Group Status
  - Group Structure
  - Interpersonal Relationship
  - Personality Assessment
  - Personality Studies
  - Sociodrama
- **SOCIOPSYCHOLOGICAL SERVICES** 490
  - Human Services
  - Psychological Needs
  - Social Development
  - Social Psychology
  - Social Services
- **Soft Cover Books**
  - USE PAPERBACK BOOKS
- **SOIL CONSERVATION** 460
  - Agriculture
  - Conservation Education
  - Depleted Resources
  - Environmental Education
  - Forestry
  - Land Use
  - Natural Resources
  - Soil Science
- **SOIL SCIENCE** 400
  - Earth Science
  - Agriculture
  - Agronomy
  - Biology
  - Chemistry
  - Fertilizers
  - Geology
  - Land Use
  - Plant Science
  - Seismology
  - Soil Conservation
- **Solar Energy**
  - USE SOLAR RADIATION
- **Solar Heating**
  - USE SOLAR RADIATION
- **SOLAR RADIATION** 400
  - Solar Energy
  - Solar Heating
  - Solar Radiation Energy
  - Radiation
  - Climate Control
  - Climatic Factors
  - Controlled Environment
  - Daylight
  - Environmental Influences
  - Heat
  - Lasers
  - Light
  - Lighting
  - Temperature
  - Thermal Environment
- **Solar Radiation Energy**
  - USE SOLAR RADIATION
- **Solicitors**
  - USE LAWYERS
- **SOLID GEOMETRY** 340
  - Geometry

MODULE VI: ANSWER SELECTION

Query: What do the letters "LIS" stand for?

Answer ______________________________

Select the complete correct answer from the list below.

ACRONYMS AND INITIALISMS DIÇTIONARY

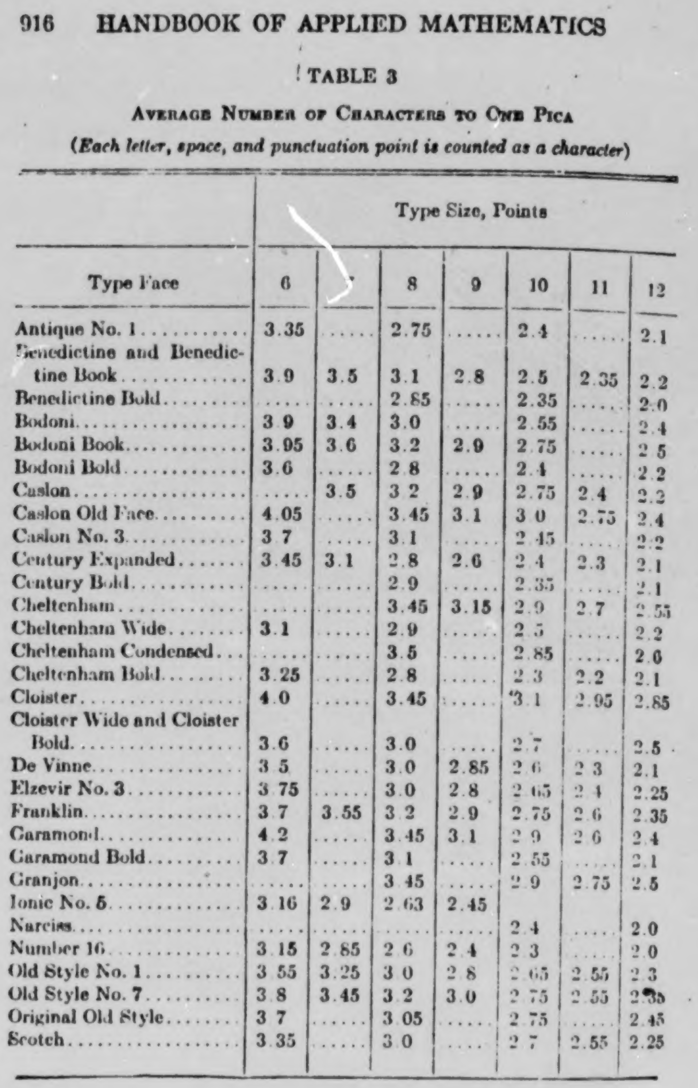
LIF	Lone Indian Fellowship
LIFE	Language Improvement to Facilitate Education of Hearing-Impaired Children (A project of NEA)
LIFE	LASER-Induced Fluorescence Emission
LIFE	League for International Food Education
LIFE	Lear Integrated Flight Equipment
LIFEL	Limited Functional English Literacy
LIFESTA	Lifeboat Station (Coast Guard)
LIFMOP	Linearly Frequency-Modulated Pulse
LIFO	Last In, First Out (Inventories last purchased are first sold) (Accounting)
LIFPL	Ligue Internationale de Femmes pour la Paix et la Liberte (Women's International League for Peace and Freedom)
LIFSUM	Airlift Summary Report (Air Force)
LIFT	Link Intellectual Functions Tester
LIFT	Logically Integrated FORTRAN Translator (UNIVAC)
LIG	Leichte Infanteriegeschuetz (Light infantry howitzer) (German military - World War II)
LIHDC	Low Income Housing Development Corporation (North Carolina)
LIHG	Ligue Internationale de Hockey sur Glace (International Ice Hockey Federation)
LII	Lithium Iodide
LIIG	Logistics Item Identification Guide (Military)
LIK	Leichte Infanteriekolonne (Light infantry supply column) (German military - World War II)
LIL	Lead-In-Light-System (Airport runway lighting)
LIL	Lily-Tulip Cup Corporation (NYSE symbol) (Delisted)
LIL	Long Island Lighting Co. (NYSE symbol)
LIL	Lunar International Laboratory
LILA	Ligue Internationale de la Librairie Ancienne (International League of Antiquarian Booksellers)
LILCO	Long Island Lighting Company
LILOC	Light Lyne Optical Correlation
LIM	Laboratory Institute of Merchandising
LIM	Leningrad Institute of Metals (USSR)
LIM	Limit
LIM	Linear Induction Motor (Magnetic rapid-transit car)
LIM	Losing Inventory Manager (Army)
LIMB	Liquid Metal Breeder (Reactor)
LIMDAT	Limiting Date
LIMDIS	Limited Distribution (Military security classification)
LIMDU	Limited Duty (Navy)
LIMEA	Low Iron Content Monoethanolamine
LIMIRIS	LASER-Induced Modulation of Infrared in Silicon
LIML	Limited-Information Maximum Likelihood (Econometrics)
LIMP	Lunar-Anchored Interplanetary Monitoring Platform (Aerospace)
LIMRF	Life Insurance Medical Research Fund
LIMS	Limb-Motion Sensor (System)
LIN	Line Item Number (Army)
LIN	Liquid Nitrogen
LINAC	Linear (Electron) Accelerator
LINC	Laboratory Instrument Computer (Medical analyzer)
LINC	Learning Institute of North Carolina
LINCOS	Lingua Cosmica (Artificial language consisting of radio signals of varying lengths and frequencies)
LINCOTT	Liaison, Interface, Coupling, Technology Transfer
LINCS	Language Information Network and Clearinghouse System
LINFT	Linear Foot
LINS	Lightweight Inertial Navigation System
LINS	LORAN Inertial System
LIO	Lionel Corporation (NYSE symbol)
LIOC	Lighted Independent of Computer
LIODD	LASER In-Flight Obstacle Detection Device
LIOH	Lithium Hydroxide
LIP	Latent Information Parameter
LIP	Life Insurance Policy
LIP	Local Initiatives Program (Canada)
LIP	Lunar Impact Probe
LIPS	Litton Industries Privacy System
LIQ	Liquid
LIR	Laboratory for Insulation Research (MIT)
LIR	Limiting Interval Reliability
LIR	Line Integral Refractometer
LIR	Longitude Independent Reset
LIR	Last Item Replacement
LIRR	Long Island Rail Road
LIS	LARC Instruction Simulator
LIS	LASER Illuminator System
LIS	LASER Interferometer System
LIS	Loop Input Signal
LIS	Lutheran Immigration Service
LISA	LARC Instruction Assembly
LISA	Library and Information Science Abstracts
LISA	Library Systems Analysis
LISA	Life Insurance Society of America
LISA	Linear Systems Analysis
LISN	Line Impedance Stabilization Network
LISP	List Processor (Data processing)
LISST	Library and Information Scholarship Today (A publication)
LIST	Library and Information Science Today (Publication)
LISTS	Library Information System Time-Sharing
LIT	Lawrence Institute of Technology (Michigan)
LIT	Light Interface Technology (Signal transmission)
LIT	Light Intratheater Transport (Air Force)
LIT	Light Ion Trough
LIT	Litton Industries, Inc. (NYSE symbol)
LIT	Location/Identification Transmitter (NASA)
LIT	Low Impedance Transmission
Lit B	Bachelor of Letters (or Literature)
Lit D	Doctor of Letters (or Literature)
LITE	Legal Information Through Electronics (Air Force)
LITFUND	Fund for the Relief of Russian Writers and Scientists in Exile
LIT-LIT	Committee on World Literacy and Christian Literature
Lit M	Master of Literature
LITR	Low Intensity Test Reactor (ORNL)
Litt B	Bachelor of Letters (or Literature)
Litt D	Doctor of Humane Letters (or Humanities); Doctor of Letters (or Literature)
Litt L	Licentiate in Letters
Litt M	Master of Letters
LITVC	Liquid Injection Thrust Vector Control
LIU	Long Island University
LIU	Wood, Wire and Metal Lathers International Union
LIUNA	Laborers' International Union of North America (AFL-CIO)
LIV	Legislative Indexing Vocabulary
LIV	Lunar and Interplanetary Vehicle
LIVC	Low Input Voltage Converter
LIVCR	Low Input Voltage Conversion and Regulation
LIVR	Low Input Voltage Regulation
LIW	Loss in Weight
LIWB	Livermore Water Boiler
LJ	Laufen Jahre (Current Year) (Germany)
LJ	Libby, McNeill & Libby (NYSE symbol)
LJ	Library Journal (Professional periodical)
LJ	Life Jacket
LJ	Line Judge (Football)
LJ	Little Joe (Spacecraft) (NASA)
LJ	Little John (Rocket) (Military)
LJ	Lord Justice
LJA	Lord Justice of Appeal
LJC	Lamar Junior College (Colorado)
LJC	Laredo Junior College (Texas)
LJC	Lasell Junior College (Massachusetts)
LJC	Lees Junior College (Kentucky)
LJC	Loretto Junior College (Kentucky)
LJD	Doctor of Letters of Journalism
LJEWU	Lanka Jathika Estate Workers' Union (Ceylon National Estate Workers' Union)
LJJ	Lords Justices
LJL	Little John Launcher (Missile)
LJLV	Little Joe Launch Vehicle (Missile)
LJP	Liquid Junction Potential
LJR	Lead Joint Runner
LJR	Little John Rocket
LJ/SLJ	Library Journal/School Library Journal (A publication)
LK	Lockheed Aircraft Corporation (NYSE symbol)
LKA	Amphibious Cargo Ship (Navy symbol)
LKAA	Ladies Kennel Association of America
LKAB	Luossavaara-Kiirunavaara Aktiebolag
LKB	Link-Belt Company (NYSE symbol) (Delisted)
LKF	Linear Kalman Filter
LKK	Lake Shore Mines, Ltd. (American Stock Exchange symbol)
LKP	Lietuvos Komunistu Partija
LK & PRR	Lahaina-Kaanapali & Pacific Railroad (Hawaii)
LKQCP	Licentiate of the King's and Queen's College of Physicians (Ireland)
LKRT	Loyal Knights of the Round Table
LKS	Liver, Kidney, Spleen (Medicine)
LKS	Logan-Keck-Stickney (Method)
LKS	Lucky Stores, Inc. (NYSE symbol)
LKSMB	Leninski Kamunistychny Saiuz Moladzi Belarusi
LL	Land Locomotion Laboratory (Army)
LL	Landline (Aviation)
LL	Large Letter
LL	Late Latin (Language)

MODULE VI: ANSWER SELECTION

Query: How many characters to one pica are thereffor the Benedictine bold typeface?

Answer ____

Select the complete correct answer from the table below.



916 HANDBOOK OF APPLIED MATHEMATICS

TABLE 3

AVERAGE NUMBER OF CHARACTERS TO ONE PICA

(Each letter, space, and punctuation point is counted as a character)

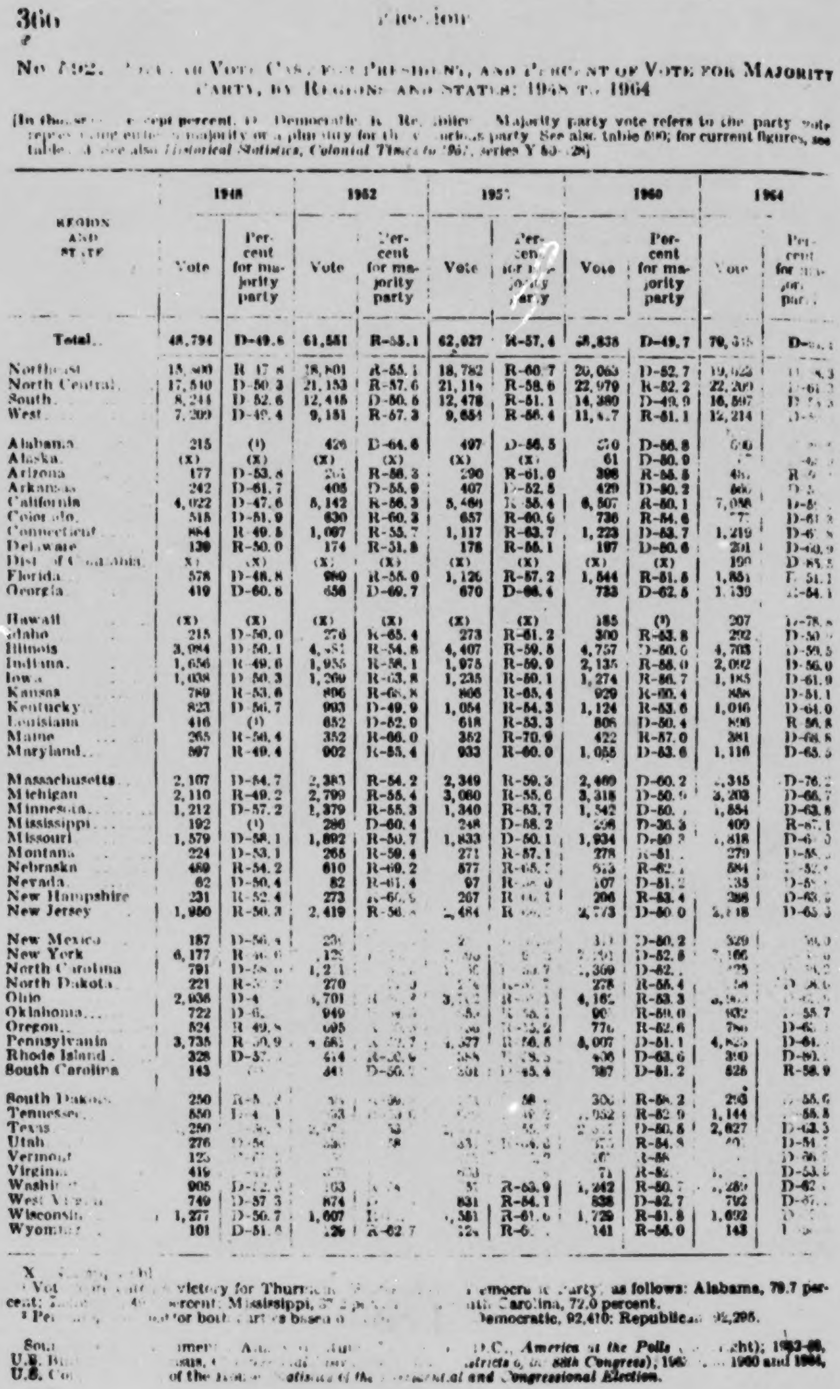
Type Face	Type Size, Points						
	6	7	8	9	10	11	12
Antique No. 1	3.35	......	2.75	......	2.4	......	2.1
Benedictine and Benedictine Book	3.9	3.5	3.1	2.8	2.5	2.35	2.2
Benedictine Bold	......	......	2.85	......	2.35	......	2.0
Bodoni	3.9	3.4	3.0	......	2.55	......	2.4
Bodoni Book	3.95	3.6	3.2	2.9	2.75	......	2.5
Bodoni Bold	3.6	......	2.8	......	2.4	......	2.2
Caslon	......	3.5	3.2	2.9	2.75	2.4	2.2
Caslon Old Face	4.05	......	3.45	3.1	3.0	2.75	2.4
Caslon No. 3	3.7	......	3.1	......	2.45	......	2.2
Century Expanded	3.45	3.1	2.8	2.6	2.4	2.3	2.1
Century Bold	......	......	2.9	......	2.35	......	2.1
Cheltenham	......	......	3.45	3.15	2.9	2.7	2.55
Cheltenham Wide	3.1	......	2.9	......	2.5	......	2.2
Cheltenham Condensed	......	......	3.5	......	2.85	......	2.6
Cheltenham Bold	3.25	......	2.8	......	2.3	2.2	2.1
Cloister	4.0	......	3.45	......	3.1	2.95	2.85
Cloister Wide and Cloister Bold	3.6	......	3.0	......	2.7	......	2.5
De Vinne	3.5	......	3.0	2.85	2.6	2.3	2.1
Elzevir No. 3	3.75	......	3.0	2.8	2.65	2.4	2.25
Franklin	3.7	3.55	3.2	2.9	2.75	2.6	2.35
Garamond	4.2	......	3.45	3.1	2.9	2.6	2.4
Garamond Bold	3.7	......	3.1	......	2.55	......	2.1
Granjon	......	......	3.45	......	2.9	2.75	2.5
Ionic No. 5	3.16	2.9	2.63	2.45			
Narciss	......	......	......	......	2.4	......	2.0
Number 16	3.15	2.85	2.6	2.4	2.3	......	2.0
Old Style No. 1	3.55	3.25	3.0	2.8	2.65	2.55	2.3
Old Style No. 7	3.8	3.45	3.2	3.0	2.75	2.55	2.35
Original Old Style	3.7	......	3.05	......	2.75	......	2.45
Scotch	3.35	......	3.0	......	2.7	2.55	2.25

MODULE VI: ANSWER SELECTION

Query: What percent of the popular vote was for the State's Rights Democratic Party in the presidential election of 1948 in Alabama?

Answer ____________________

Select the correct answer from the table below.



306 [illegible]

No. 502. [illegible] Vote Cast for President, and Percent of Vote for Majority Party, by Regions and States: 1948 to 1964

[In thousands, except percent. D Democratic; R Republican. Majority party vote refers to the party vote representing either a majority or a plurality for the victorious party. See also table 500; for current figures, see table [illegible]. See also Historical Statistics, Colonial Times to 1957, series Y 80-128]

Region and state	1948 Vote	1948 Percent for majority party	1952 Vote	1952 Percent for majority party	1956 Vote	1956 Percent for majority party	1960 Vote	1960 Percent for majority party	1964 Vote	1964 Percent for majority party
Total	**48,794**	**D-49.6**	**61,551**	**R-55.1**	**62,027**	**R-57.4**	**68,838**	**D-49.7**	**70,[illegible]**	**D-[illegible]**
Northeast	15,[illegible]	R-[illegible]	18,801	R-55.1	18,782	R-60.7	20,063	D-52.7	19,[illegible]	[illegible]
North Central	17,510	D-50.3	21,153	R-57.6	21,116	R-58.6	22,979	R-52.2	22,200	[illegible]-61.3
South	8,244	D-52.6	12,415	D-50.6	12,478	R-51.1	14,380	D-49.9	16,597	[illegible]
West	7,209	D-49.4	9,181	R-57.3	9,654	R-56.4	11,[illegible]	R-51.1	12,214	[illegible]
Alabama	215	(1)	426	D-64.6	497	D-56.5	570	D-56.8	690	[illegible]
Alaska	(X)	(X)	(X)	(X)	(X)	(X)	61	D-50.9	[illegible]	[illegible]
Arizona	177	D-53.8	261	R-58.3	290	R-61.0	398	R-55.5	48[illegible]	R-[illegible]
Arkansas	242	D-61.7	405	D-55.9	407	D-52.5	429	D-50.2	56[illegible]	D-[illegible]
California	4,022	D-47.6	5,142	R-56.3	5,466	R-55.4	6,507	R-50.1	7,058	D-5[illegible]
Colorado	515	D-51.9	630	R-60.3	657	R-60.6	736	R-54.6	77[illegible]	D-61.3
Connecticut	884	R-49.5	1,097	R-55.7	1,117	R-63.7	1,223	D-53.7	1,219	D-6[illegible]
Delaware	139	R-50.0	174	R-51.8	178	R-55.1	197	D-50.6	201	D-60.9
Dist. of Columbia	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	199	D-85.5
Florida	578	D-48.8	990	R-55.0	1,126	R-57.2	1,544	R-51.5	1,85[illegible]	D-51.1
Georgia	419	D-60.8	656	D-69.7	670	D-66.4	733	D-62.5	1,139	[illegible]-54.1
Hawaii	(X)	(X)	(X)	(X)	(X)	(X)	185	(3)	207	D-78.8
Idaho	215	D-50.0	276	R-65.4	273	R-61.2	300	R-53.8	292	D-50.[illegible]
Illinois	3,984	D-50.1	4,481	R-54.8	4,407	R-59.5	4,757	D-50.0	4,703	D-59.5
Indiana	1,656	R-49.6	1,955	R-58.1	1,975	R-59.9	2,135	R-55.0	2,092	D-56.0
Iowa	1,038	D-50.3	1,269	R-63.8	1,235	R-59.1	1,274	R-56.7	1,185	D-61.9
Kansas	789	R-53.6	896	R-68.8	866	R-65.4	929	R-60.4	858	D-54.1
Kentucky	823	D-56.7	993	D-49.9	1,054	R-54.3	1,124	R-53.6	1,046	D-64.0
Louisiana	416	(1)	652	D-52.9	618	R-53.3	808	D-50.4	896	R-56.8
Maine	265	R-56.4	352	R-66.0	352	R-70.9	422	R-57.0	381	D-68.8
Maryland	597	R-49.4	902	R-55.4	933	R-60.0	1,055	D-53.6	1,116	D-65.5
Massachusetts	2,107	D-54.7	2,383	R-54.2	2,349	R-59.3	2,469	D-60.2	[illegible],345	D-76.2
Michigan	2,110	R-49.2	2,799	R-55.4	3,080	R-55.6	3,318	D-50.9	3,203	D-66.7
Minnesota	1,212	D-57.2	1,379	R-55.3	1,340	R-53.7	1,542	D-50.[illegible]	1,554	D-63.8
Mississippi	192	(1)	286	D-60.4	248	D-58.2	298	D-36.3	409	R-87.1
Missouri	1,579	D-58.1	1,892	R-50.7	1,833	D-50.1	1,934	D-50.3	[illegible],818	D-6[illegible]
Montana	224	D-53.1	265	R-59.4	271	R-57.1	278	R-51.[illegible]	279	D-58.[illegible]
Nebraska	489	R-54.2	610	R-69.2	577	R-65.5	613	R-62.[illegible]	584	[illegible]-52.[illegible]
Nevada	62	D-50.4	82	R-61.4	97	R-[illegible]	107	D-51.2	135	D-5[illegible]
New Hampshire	231	R-52.4	273	R-60.9	267	R-[illegible]	296	R-53.4	288	D-63.[illegible]
New Jersey	1,950	R-50.3	2,419	R-56.[illegible]	[illegible],484	R-[illegible]	2,773	D-50.0	[illegible]	D-65.[illegible]
New Mexico	187	D-56.4	23[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	D-50.2	329	[illegible]
New York	6,177	R-[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	D-52.5	7,166	[illegible]
North Carolina	791	D-58.[illegible]	1,2[illegible]	[illegible]	[illegible]	[illegible]	[illegible],369	D-52.[illegible]	[illegible]	[illegible]
North Dakota	221	R-[illegible]	270	[illegible]	[illegible]	[illegible]	278	R-55.4	[illegible]	[illegible]
Ohio	2,936	D-4[illegible]	[illegible],701	[illegible]	3,[illegible]	R-[illegible]	4,16[illegible]	R-53.3	[illegible]	[illegible]
Oklahoma	722	D-6[illegible]	949	[illegible]	[illegible]	R-[illegible]	90[illegible]	R-59.0	932	[illegible]-55.7
Oregon	524	R-49.8	695	[illegible]	[illegible]	R-55.2	776	R-52.6	78[illegible]	D-6[illegible]
Pennsylvania	3,735	R-50.9	[illegible]	[illegible]	[illegible]	R-56.5	5,007	D-51.1	4,8[illegible]	D-6[illegible]
Rhode Island	328	D-57.[illegible]	414	R-50.[illegible]	[illegible]	R-58.[illegible]	406	D-63.6	390	D-80.[illegible]
South Carolina	143	[illegible]	341	D-50.[illegible]	301	D-45.4	387	D-51.2	525	R-58.9
South Dakota	250	R-5[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	306	R-58.2	293	[illegible]-55.6
Tennessee	550	D-4[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible],052	R-52.9	1,144	[illegible]-55.5
Texas	[illegible],250	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	D-50.5	2,627	D-63.3
Utah	276	D-5[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	R-54.8	[illegible]	D-54.[illegible]
Vermont	125	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	R-58.[illegible]	[illegible]	D-66.[illegible]
Virginia	419	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	77[illegible]	R-52.[illegible]	[illegible]	D-53.[illegible]
Washington	905	D-52.[illegible]	[illegible]63	[illegible]	[illegible]	R-53.9	1,242	R-50.7	[illegible],258	D-62.[illegible]
West Virginia	749	D-57.3	874	[illegible]	831	R-54.1	838	D-52.7	792	D-67.[illegible]
Wisconsin	1,277	D-50.7	1,607	R-[illegible]	[illegible],551	R-61.6	1,729	R-51.8	1,692	D-[illegible]
Wyoming	101	D-51.6	129	R-62.7	124	R-6[illegible]	141	R-55.0	143	[illegible]

X [illegible]

[1] Vote [illegible] victory for Thurmond [illegible] Democratic Party, as follows: Alabama, 79.7 percent; [illegible] 49 percent; Mississippi, 87.2 percent; [illegible] South Carolina, 72.0 percent.

[2] Percent [illegible] for both parties based [illegible] Democratic, 92,410; Republican, 92,295.

Source: [illegible] America at the Polls [illegible]; 1952-60, U.S. [illegible] Congress), 196[illegible] 1960 and 1964, U.S. [illegible] of the [illegible] Statistics of the Presidential and Congressional Election.

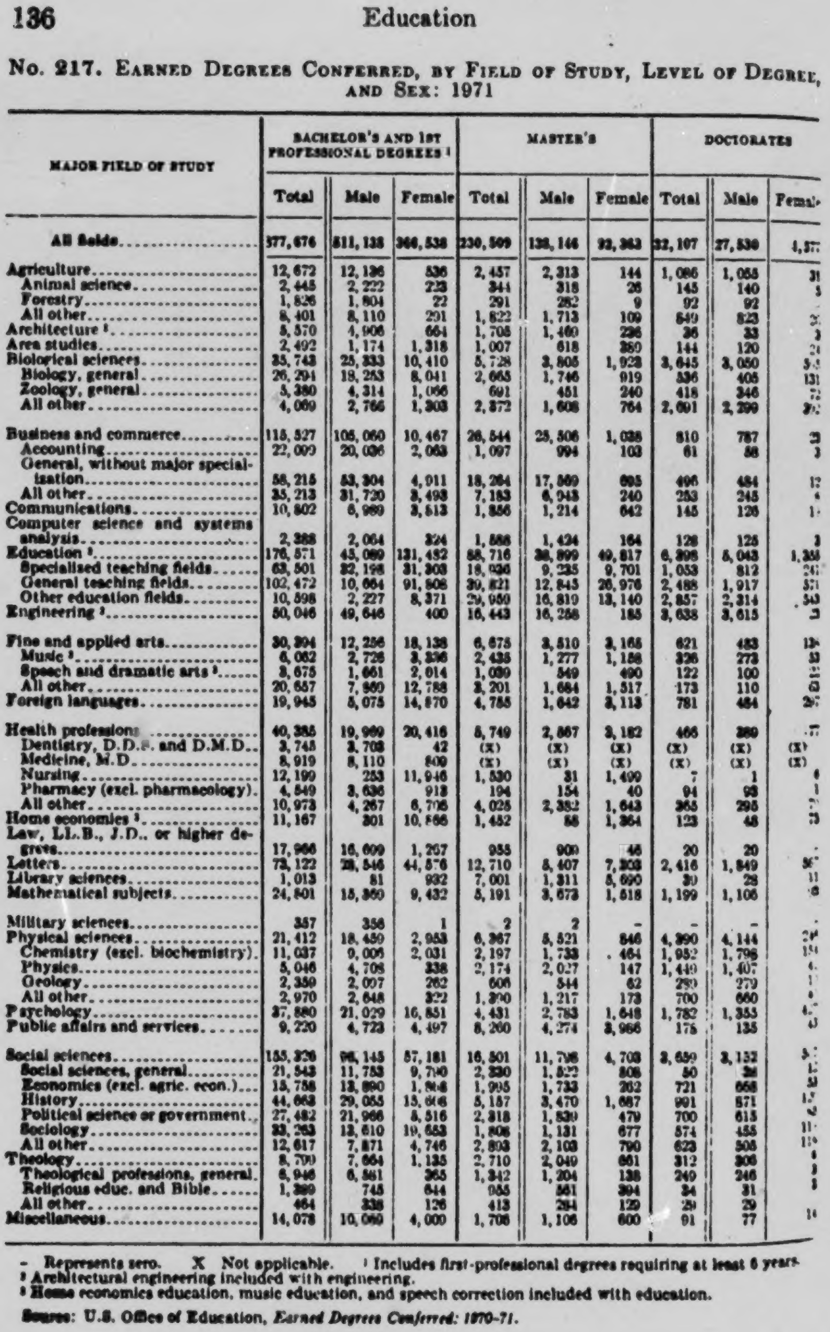
22

MODULE VI: ANSWER SELECTION

Query: How many master's degrees in history were awarded to women in 1971?

Answer ________________

Select the correct answer from the table below.



136 Education

No. 217. Earned Degrees Conferred, by Field of Study, Level of Degree, and Sex: 1971

Major field of study	Bachelor's and 1st professional degrees[1]			Master's			Doctorates		
	Total	Male	Female	Total	Male	Female	Total	Male	Femal
All fields	877,676	511,138	366,538	230,509	138,146	92,363	32,107	27,530	4,57
Agriculture	12,672	12,136	536	2,457	2,313	144	1,086	1,055	31
Animal science	2,445	2,222	223	344	318	26	145	140	5
Forestry	1,826	1,804	22	291	282	9	92	92	
All other	8,401	8,110	291	1,822	1,713	109	849	823	2
Architecture[2]	5,570	4,906	664	1,706	1,460	246	36	33	3
Area studies	2,492	1,174	1,318	1,007	618	389	144	120	2
Biological sciences	35,743	25,333	10,410	5,728	3,805	1,923	3,645	3,050	5
Biology, general	26,294	18,253	8,041	2,665	1,746	919	536	405	131
Zoology, general	5,380	4,314	1,066	691	451	240	418	346	7
All other	4,069	2,766	1,303	2,372	1,608	764	2,691	2,299	3
Business and commerce	115,527	105,060	10,467	26,544	25,506	1,038	810	787	2
Accounting	22,099	20,036	2,063	1,097	994	103	61	58	3
General, without major specialization	58,215	53,304	4,911	18,264	17,569	695	496	484	1
All other	35,213	31,720	3,493	7,183	6,943	240	253	245	
Communications	10,802	6,989	3,813	1,856	1,214	642	145	126	1
Computer science and systems analysis	2,388	2,064	324	1,588	1,424	164	128	125	3
Education[3]	176,571	45,089	131,482	88,716	38,899	49,817	6,898	5,543	1,35
Specialized teaching fields	63,501	32,198	31,303	18,936	9,235	9,701	1,053	812	24
General teaching fields	102,472	10,664	91,808	39,821	12,845	26,976	2,488	1,917	57
Other education fields	10,598	2,227	8,371	29,959	16,819	13,140	2,857	2,314	54
Engineering[2]	50,046	49,646	400	16,443	16,258	185	3,638	3,615	2
Fine and applied arts	30,394	12,256	18,138	6,675	3,510	3,165	621	483	13
Music[3]	6,062	2,726	3,336	2,435	1,277	1,158	326	273	5
Speech and dramatic arts[3]	3,675	1,661	2,014	1,039	549	490	122	100	2
All other	20,657	7,869	12,788	3,201	1,684	1,517	173	110	6
Foreign languages	19,945	5,075	14,870	4,755	1,642	3,113	781	484	29
Health professions	40,385	19,969	20,416	5,749	2,567	3,182	466	389	7
Dentistry, D.D.S. and D.M.D.	3,745	3,703	42	(X)	(X)	(X)	(X)	(X)	(X)
Medicine, M.D.	8,919	8,110	809	(X)	(X)	(X)	(X)	(X)	(X)
Nursing	12,199	253	11,946	1,530	31	1,499	7	1	6
Pharmacy (excl. pharmacology)	4,549	3,636	913	194	154	40	94	93	1
All other	10,973	4,267	6,706	4,025	2,382	1,643	365	295	7
Home economics[3]	11,167	301	10,866	1,452	88	1,364	123	48	7
Law, LL.B., J.D., or higher degrees	17,966	16,699	1,267	955	909	46	20	20	-
Letters	73,122	28,546	44,576	12,710	5,407	7,303	2,416	1,849	56
Library sciences	1,013	81	932	7,001	1,311	5,690	30	28	1
Mathematical subjects	24,801	15,369	9,432	5,191	3,673	1,518	1,199	1,106	9
Military sciences	357	356	1	2	2	-	-	-	
Physical sciences	21,412	18,459	2,953	6,367	5,521	846	4,390	4,144	2
Chemistry (excl. biochemistry)	11,037	9,006	2,031	2,197	1,733	464	1,952	1,796	15
Physics	5,046	4,708	338	2,174	2,027	147	1,449	1,407	4
Geology	2,359	2,097	262	606	544	62	290	279	1
All other	2,970	2,648	322	1,390	1,217	173	700	660	
Psychology	37,880	21,029	16,851	4,431	2,783	1,648	1,782	1,353	4
Public affairs and services	9,220	4,723	4,497	8,260	4,274	3,986	176	135	4
Social sciences	155,326	98,145	57,181	16,501	11,798	4,703	3,659	3,152	5
Social sciences, general	21,543	11,753	9,790	2,330	1,522	808	50	36	1
Economics (excl. agric. econ.)	15,758	13,890	1,868	1,995	1,733	262	721	668	5
History	44,663	29,055	15,608	5,157	3,470	1,687	991	871	1
Political science or government	27,482	21,966	5,516	2,318	1,839	479	700	615	
Sociology	33,263	13,610	19,653	1,808	1,131	677	574	455	11
All other	12,617	7,871	4,746	2,893	2,103	790	623	505	11
Theology	8,799	7,664	1,135	2,710	2,049	661	312	306	
Theological professions, general	6,946	6,581	365	1,342	1,204	138	249	246	3
Religious educ. and Bible	1,389	745	644	955	561	394	34	31	3
All other	464	338	126	413	284	129	29	29	
Miscellaneous	14,078	10,069	4,009	1,706	1,106	600	91	77	14

- Represents zero. X Not applicable. [1] Includes first-professional degrees requiring at least 6 years.
[2] Architectural engineering included with engineering.
[3] Home economics education, music education, and speech correction included with education.

Source: U.S. Office of Education, *Earned Degrees Conferred: 1970-71.*

MODULE VI: ANSWER SELECTION

Query: What is the average of the reported salaries for 1972 graduates of the University of Minnesota library school?

Answer ____________________

Select the correct answer from the table below.

TABLE 1 PLACEMENTS AND SALARIES OF 1972 GRADUATES

School	Placements Total*	Salaries			Low Salary			High Salary			Average Salary			Median Salary		
		W	M	T	Women	Men	All	Women	Men	All	Women	Men	All	Women	Men	All
Albany	70	30	9	39	7056	7900	7056	14000	15120	15120	8666	10397	9066	8712	9500	8870
Alberta	51	24	7	31	7680	8000	7680	12000	15000	15000	8347	—	—	8200	—	—
Atlanta	49	39	8	47	7000	8600	7000	13000	10000	13000	9422	9359	9412	9057	9400	9057
Buffalo	32	23	2	25	7000	7500	7000	10730	9810	10730	9061	8655	9028	8865	8655	8865
Calif. (Berk.)	49	33	16	49	7020	6600	6600	9828	10800	10800	8643	9045	8774	8652	9050	8700
Calif. (L.A.)	33	17	9	26	7200	8700	7200	12000	10572	12000	9324	9444	9365	9134	9100	9100
Case West. Res.	108	69	13	82	7000	7800	7000	12000	11000	12000	8475	9061	8567	8300	8700	8200
Catholic	55	40	15	55	7200	7600	7200	20000	30000	30000	10762	13253	11432	10500	11000	10500
Chicago	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Columbia	120	78	34	112	6600	7400	6600	14830	14830	14830	9288	9502	9353	9100	9100	9100
Dalhousie	24	14	1	15	7400	8550	7400	10200	8550	10200	8455	8550	8485	8400	—	8600
Denver	92	23	8	31	7500	8400	7500	15000	12024	15000	9373	9584	9427	8700	9303	9000
Drexel	149	95	22	117	6981	—	6981	--	20000	20000	9219	10180	9400	9000	10000	9000
Emory	76	48	11	59	7200	7000	7000	13468	11046	13468	8952	9130	8986	8668	9000	8740
Florida	94	48	27	75	6000	7835	6000	11950	11800	11950	8397	9142	8579	8000	9000	8500
Geneseo	74	50	22	72	7000	8009	7000	14000	14000	14000	9115	9785	9339	9000	9175	9000
Hawaii	79	29	2	31	5400	8076	5400	14000	10148	14000	8829	9112	8848	8400	—	8400
Illinois	156	99	24	123	6470	8300	6470	13850	10500	13850	8943	9095	9816	8500	9150	8750
Indiana	112	58	26	84	6919	6000	6000	10994	14820	14820	8424	8807	8543	8378	8500	8400
Iowa	52	23	13	36	6000	8085	6000	11000	20000	20000	8520	9815	8990	8340	8800	8500
Kansas State	73	28	9	37	6500	8000	6500	11840	13250	8007	10311	8567	8000	9750	9175	9000
Kent	27	13	8	21	7000	6500	6500	10600	13500	13500	8471	9310	8801	8400	—	8200
Kentucky	90	29	9	38	6800	7500	6800	13600	11123	13600	8730	8494	8538	10200	9312	10200
Long Island	99	55	9	64	6500	9152	6500	17882	19435	19435	10426	12571	10635	10700	11800	10400
Maryland	13	11	2	13	7450	9170	7450	13309	10200	13309	9957	9685	9915	9400	—	9400
Michigan	179	125	23	148	6000	7600	6000	17980	15000	17980	9520	9810	9560	9200	9500	9300
Minnesota	54	41	6	47	7500	8300	7500	16900	14600	16900	10110	10779	10444	9200	10387	9794
Missouri	57	40	13	53	6000	7550	6000	11200	8618	8715	8618	8715	8642	8500	8400	8500
N. Carolina	64	45	19	64	4800	8000	4800	10500	12050	12050	8474	9484	8774	7560	9600	9000
Oklahoma	69	27	12	39	—	5500	5500	10800	13500	13500	7770	9297	8533	8000	9500	8200
Oregon	47	16	5	21	7200	7600	7200	19200	11614	19200	9612	8987	9463	8900	8658	8750

21

MODULE VI: ANSWER SELECTION

Query: What was the average price of trade books in law in 1972?

Answer____________

Select the correct answer from the table below.

TABLE 3 U.S. HARDCOVER TRADE-TECHNICAL BOOKS: AVERAGE PRICES AND PRICE INDEXES FOR 1967–1969, 1971, 1972, and 1973[1]

(Index of 100.0 equivalent to average price for 1967–1969)

Category	*1967–1969*	*1971*[4]		*1972*		*1973*		
	Average Price	*Average Price*	*Index*	*Average Price*	*Index*	*Total No. of Books*	*Average Price*	*Index*
Agriculture	$ 9.71	$13.64	140.5	$10.94	112.7	289	$11.79	121.4
Art	12.44	16.41	131.9	14.94	120.1	1,053	15.42	124.0
Biography[2]	9.71	11.64	119.8	12.80	131.8	1,911	12.70	130.8
Business	10.41	12.60	121.0	12.45	119.6	568	13.23	127.1
Education	6.58	7.81	108.6	10.26	155.9	1,116	9.67	147.0
Fiction	4.96	5.98	120.5	6.47	130.4	2,158	7.37	148.6
General Works[3]	15.28	25.77	141.9	25.19	164.9	983	18.42	120.5
History	9.95	12.97	130.3	14.92	149.9	1,300	15.56	156.4
Home Economics[3]	6.55	7.33	111.9	7.88	120.3	432	10.12	154.5
Juveniles	3.53	4.23	119.8	4.37	123.8	1,932	4.65	131.7
Language[3]	10.13	10.15	100.1	14.16	139.8	292	12.53	123.7
Law	13.22	18.37	138.9	17.15	129.7	558	16.78	126.9
Literature	8.04	11.43	142.1	12.03	149.6	1,755	11.48	142.8
Medicine	13.41	17.58	133.0	16.19	120.7	1,421	15.92	118.7
Music	9.08	11.73	129.1	13.53	149.0	271	12.68	139.6
Philosophy, Psychology[3]	8.41	10.77	128.0	10.44	124.1	1,001	10.89	129.5
Poetry, Drama	6.69	9.15	136.7	10.62	158.7	1,484	10.50	156.5
Religion	6.29	8.48	134.8	9.80	155.8	1,051	9.35	148.6
Science	12.67	15.94	125.8	16.05	126.7	2,130	17.34	136.9
Sociology, Economics[3]	9.35	17.47	186.8	16.93	181.1	4,650	12.22	130.7
Sports, Recreation	7.91	10.20	128.9	10.65	134.6	701	9.73	123.0
Technology	13.03	15.28	117.2	16.11	123.6	988	15.38	118.0
Travel[3]	9.34	19.15	205.0	12.78	136.8	1,124	13.19	141.2
TOTALS	$ 8.77	$13.25	151.0	$12.99	148.1	29,168	$12.20	139.1

[1] Index of prices. Based on the tabulation of the books recorded in the "Weekly Record" section of *Publishers Weekly* for the years indicated. Not included are "mass market paperbacks," government documents, and certain multivolume encyclopedias. Index figures compiled by Hugh C. Atkinson. For average prices of hardcover books for years prior to 1971, see previous editions of the *Bowker Annual*.

[2] These figures include biographies placed in other classes by the Library of Congress.

[3] A new category. Index base is 1967 and 1969 rather than 1967 through 1969.

[4] *Publishers Weekly* figures for 1971, 1972, 1973 reported per volume rather than per title as they had been in previous years. Thus care should be exercised when interpreting the figures. It is important to keep in mind that *Publishers Weekly* uses a one-year base, 1967, in computing its indexes, rather than the three-year base used above and preferred by the Library Materials Price Index Committee of the American Library Association.

MODULE VI: ANSWER SELECTION

Query: By what percentage have Library Science periodicals increased in price from 1969 to 1973?

Answer ______________

Select the correct answer from the table below.

TABLE 1 U.S. PERIODICALS: AVERAGE PRICES AND PRICE INDEXES FOR 1967–1969, 1970, 1971, 1972, and 1973[1]

(Index of 100.0 equivalent to average price for 1967–1969)

	1967–1969	*1970*		*1971*		*1972*		*1973*	
Subject Area	*Average Price*	*Average Price*	*Index*	*Average Price*	*Index*	*Average Price*	*Index*	*Average Price*	*Index*
U.S. Periodicals (Based on total group of 2,537 titles included in the indexes which follow)	$ 8.66	$10.41	120.2	$11.66	134.6	$13.23	152.8	$16.20	187.1
Agriculture	4.68	5.17	110.5	5.74	122.6	6.35	135.7	7.21	154.1
Business & Economics	7.54	9.03	119.8	9.72	128.9	9.95	132.0	12.25	162.5
Chemistry & Physics	24.48	33.45	136.6	38.31	156.5	45.46	185.7	56.61	231.5
Children's Periodicals	2.60	2.65	101.9	2.94	113.1	3.24	124.6	3.27	125.8
Education	6.34	7.09	111.8	8.25	130.1	9.51	150.0	11.34	178.9
Engineering	10.03	12.07	120.3	13.28	132.4	16.04	160.0	23.37	233.0
Fine and Applied Arts	6.71	7.50	111.8	8.17	121.8	8.42	125.5	9.16	136.5
General Interest Periodicals	7.28	8.47	116.3	9.32	128.0	9.62	132.1	10.05	138.5
History	6.04	6.90	114.2	7.40	122.5	8.25	136.6	8.95	148.2
Home Economics	6.45	7.56	117.2	7.94	123.1	10.25	158.9	12.21	189.3
Industrial Arts	6.87	7.59	110.5	8.14	118.5	8.98	130.7	9.57	139.3
Journalism & Communications	5.72	6.36	111.2	6.91	120.8	8.68	151.7	13.05	228.2
Labor & Industrial Relations	3.01	3.59	119.3	3.88	128.9	3.92	130.2	6.02	200.0
Law	8.71	9.84	113.0	10.19	117.0	11.15	128.0	13.19	151.4
Library Science	6.27	7.88	125.7	8.65	138.0	9.40	150.0	10.48	167.2
Literature & Language	5.38	6.15	114.3	6.88	127.9	7.45	138.5	8.14	151.3
Math, Botany, Geology, & General Science	15.30	18.11	118.4	20.06	131.1	22.63	148.0	26.99	176.4
Medicine	19.38	23.44	120.9	27.00	139.3	29.59	152.7	33.60	173.4
Philosophy & Religion	5.27	5.84	110.8	6.71	127.3	7.16	135.9	8.12	154.1
Physical Education & Recreation	4.89	5.34	109.2	5.72	117.0	6.39	130.7	6.83	139.7
Political Science	6.18	6.72	108.7	7.23	117.0	8.47	137.1	9.69	156.8
Psychology	14.55	17.12	117.7	18.70	128.5	20.98	144.2	23.17	159.2
Sociology & Anthropology	6.11	7.31	119.6	7.92	129.6	9.12	149.3	11.28	184.6
Zoology	13.39	16.86	125.9	19.29	144.1	22.39	167.2	24.07	179.8

[1] For comment on U.S. periodicals price indexes, see the article in *Library Journal*, July 1973 issue, "Price Indexes . . . : U.S. Periodicals and Serial Services," by Norman B. Brown. For average prices for years prior to 1970, see previous editions of the *Bowker Annual*.

A. CLUES FOR THE IDENTIFICATION OF QUERIES TO BE NEGOTIATED

Table 5

Checklist for Identification of Negotiable Queries

1. Is this the real query?
2. Is the subject of the query recognized?
3. Is the query statement unambiguous and complete?
4. Is the amount of information wanted specified?
5. Is the desired level of answer specified?
6. Is the query answerable in time available to librarian?
7. Is the query answerable in the literature?
8. If there are potential constraints of language, time period, geography, or type of publication, are these constraints given?

TABLE 6

CHECKLIST FOR EVALUATING NEGOTIATION

Good Negotiation

_____Librarian uses open questions in the initial stages of negotiation.

_____Encourages patron to discuss his information needs.

_____Summarizes or paraphrases the patron's query to insure mutual understanding.

_____Makes eye contact with patron.

_____Gives patron full attention.

_____Remains objective about the content of the query.

_____Attempts to make patron feel at ease.

_____Follows the patron's train of thought.

_____Shows empathy for the patron.

_____Is aware of nonverbal clues.

Poor Negotiation

_____Librarian interrupts patron as he attempts to discuss his information needs.

_____Uses closed questions too early in the interview.

_____Doesn't give patron full attention.

_____Reacts subjectively to the content of the query.

_____Is too quick to state that the query cannot be answered.

_____Provides an answer to the query prematurely without thorough consideration.

_____Places patron on the defensive.

_____Exhibits uneasiness in working with patrons.

EXERCISE FOR MODULE VII

QUERY NEGOTIATION

Exercise #1 - Identification of queries to be negotiated

The following requests for information represent either queries that need to be negotiated or queries that can be answered without negotiation. For each query statement either write in one or more numbers corresponding to the reasons for negotiating on the checklist for identifying queries to be negotiated which is included in this package or check the "Does not need to be negotiated" column. Worked out examples are given for two queries.

Query Statements	Number(s) on Checklist	Does not have to be negotiated
EXAMPLES		
A. I would like to learn about jet engines.	3,4,5,8	
B. When was the chemical element 'nickel' discovered?		X
1. What library programs does the University of Illinois offer?		
2. Who was the Nobel Prize winner in 1974?		
3. How do I use Index Medicus?		
4. What was the highest selling price for IBM common stock last year?		
5. How many books published in the U.S. last year sold fewer than 3000 copies?		
6. What is the distance between Princeton and Durham?		
7. How many tons of wheat will be produced in the U.S. next year?		
8. I would like publications on the electoral college.		

9. Prepare a list of full professors of English that are less than 35 yrs. old and are teaching in Ivy League colleges. __________ __________

10. I would like references on the causes of economic depressions. __________ __________

11. I need John J. Mann's 1974 Scientific American article on frogs. __________ __________

12. How many households are without running water? __________ __________

13. I would like to see a book on Sociology. __________ __________

14. What are adverse effects of drugs on creativity? __________ __________

15. What was the lowest temperature in Chicago, Illinois on January 12, 1972? __________ __________

16. How many people in the U.S. are vegetarians and hunt animals? __________ __________

17. Give me the name and address of the U.S. Commissioner of Patents. __________ __________

18. Does the library have books on physics? __________ __________

19. What is the temperature in Rome? __________ __________

20. How many articles in College and Research Libraries were written by more than one author in 1975? __________ __________

30

EXERCISE FOR MODULE VII - QUERY NEGOTIATION

Exercise #2 - Practice in Query Negotiation

Each student should choose a partner for practice in negotiating a query. You and your partner will tape record two individual negotiation simulations: one in which you play the role of "patron", and another in which you play the role of "librarian".

For the role of patron, you should develop a negotiable query to ask the librarian. This query has two parts: (1) the query you actually ask the librarian (which may be vague, incomplete, misleading) and (2) the real query - what you actually want to know. The real query is not presented directly to the librarian except as a result of successful negotiation by the librarian.

As the librarian, you should interview the patron as you would in a real reference situation, attempting to determine the real query. When you have identified the real query the negotiation is complete. You do not have to answer the real query.

Instructions

1. Develop a negotiable query with its two distinct parts in mind. Hand in a record of your query (real query and query as asked) when you hand in your completed tape.
2. Tape both negotiations spontaneously (one time only) and write your names on the tape before turning it in.
3. Assignment due ____.

Appendix C

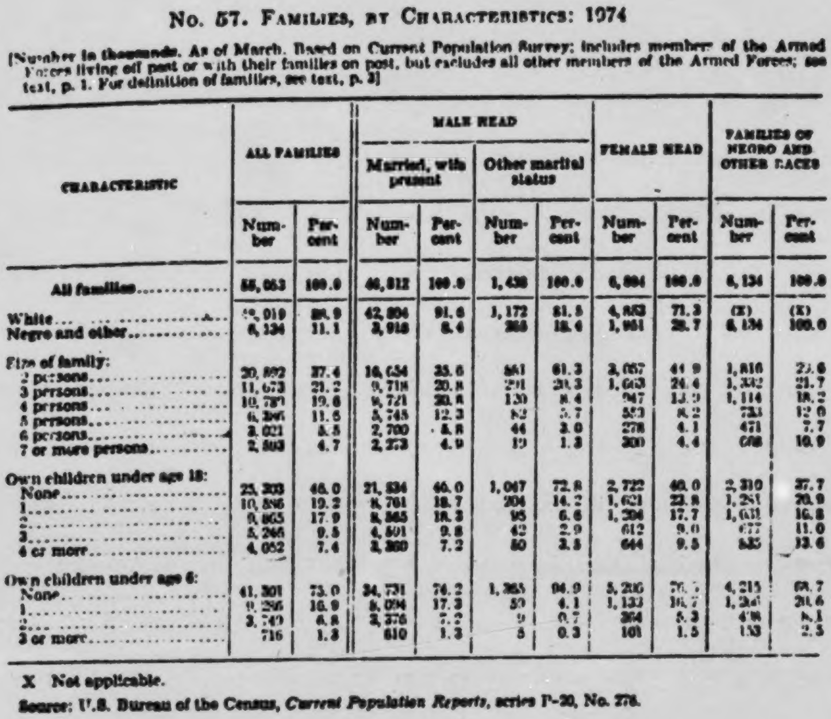
THE READING OF TABLES, GRAPHS, AND CHARTS

The Reading of Tables, Graphs, and Charts (Addition to answer selection chapter)

Robert Fairthorne, a mathematician who interests himself with problems of librarianship, once said that librarians are typically literate rather than numerate. He bases this opinion on observations, confirmed by others, that most librarians have a background in the humanities and social sciences rather than mathematics or science. Elementary mathematical skills are needed by a reference librarian for selecting answers to some queries. Specifically, s/he needs to be able to select answers from data (numbers with assigned meaning) presented in graphic form. Such queries are asked in all types of libraries, not only in science and technology libraries. Examples of such queries include queries for costs, measurements and conversion factors. Answers to such queries are typically selected from graphs. In some cases the patron will expect the librarian to merely locate a graph containing the requested information, preferring to select his answer for himself. But frequently the user will require the librarian's assistance in selecting a correct answer from the data presented in a graph. The four kinds of graphic presentations that you are likely to encounter will now be operationally defined and exemplified.

__Tables__ provide a systematic arrangement of data in either columns or rows.

Figure 1: Table



No. 57. FAMILIES, BY CHARACTERISTICS: 1974

[Number in thousands. As of March. Based on Current Population Survey; includes members of the Armed Forces living off post or with their families on post, but excludes all other members of the Armed Forces; see text, p. 1. For definition of families, see text, p. 3]

CHARACTERISTIC	ALL FAMILIES		MALE HEAD				FEMALE HEAD		FAMILIES OF NEGRO AND OTHER RACES	
			Married, wife present		Other marital status					
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All families	55,053	100.0	46,812	100.0	1,438	100.0	6,804	100.0	6,134	100.0
White	48,919	88.9	42,894	91.6	1,172	81.5	4,853	71.3	(X)	(X)
Negro and other	6,134	11.1	3,918	8.4	266	18.5	1,951	28.7	6,134	100.0
Size of family:										
2 persons	20,592	37.4	16,634	35.5	881	61.3	3,057	44.9	1,816	29.6
3 persons	11,673	21.2	9,718	20.8	291	20.3	1,663	24.4	1,332	21.7
4 persons	10,787	19.6	9,721	20.8	130	9.4	947	13.9	1,114	18.2
5 persons	6,380	11.6	5,745	12.3	82	5.7	553	8.2	733	12.0
6 persons	3,021	5.5	2,700	5.8	44	3.0	278	4.1	471	7.7
7 or more persons	2,593	4.7	2,273	4.9	19	1.3	300	4.4	668	10.9
Own children under age 18:										
None	25,303	46.0	21,534	46.0	1,047	72.8	2,722	40.0	2,310	37.7
1	10,586	19.2	8,761	18.7	204	14.2	1,621	23.8	1,281	20.9
2	9,865	17.9	8,565	18.3	95	6.6	1,204	17.7	1,031	16.8
3	5,266	9.5	4,601	9.8	42	2.9	612	9.0	677	11.0
4 or more	4,052	7.4	3,360	7.2	50	3.5	644	9.5	835	13.6
Own children under age 6:										
None	41,301	75.0	34,731	74.2	1,365	94.9	5,206	76.5	4,215	68.7
1	9,286	16.9	8,094	17.3	59	4.1	1,133	16.7	1,264	20.6
2	3,749	6.8	3,376	7.2	9	0.7	364	5.3	498	8.1
3 or more	716	1.3	610	1.3	5	0.3	101	1.5	153	2.5

X Not applicable.

Source: U.S. Bureau of the Census, *Current Population Reports*, series P-20, No. 276.

Sample query: How many white families were headed by females in 1974?

Answer: 4,853,000 families.

Qualifications: As of March 1974, includes members of the Armed Forces living off post or with their families on post, but excludes all other members of the Armed Forces.

Source: U.S. Bureau of the Census, Current Population Reports, Series P. 20, No. 276.

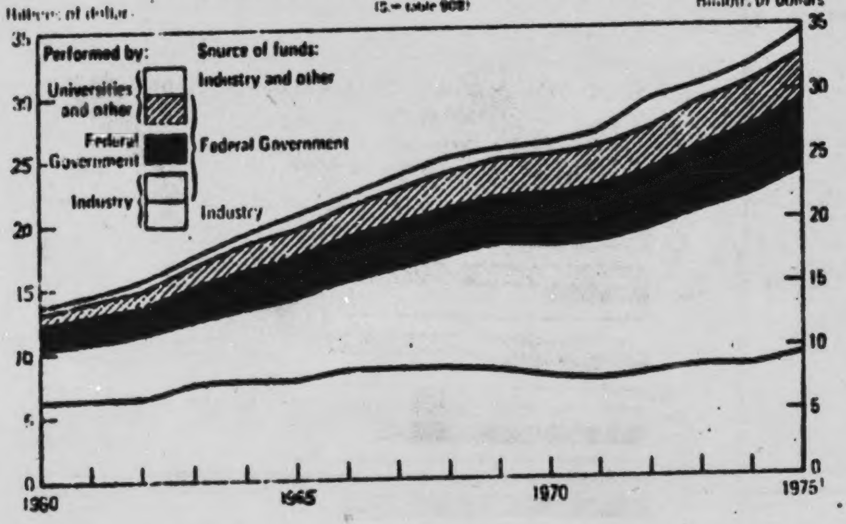
Citation: __Statistical Abstracts of the United States__. U.S. Department of Commerce. 96th ed., 1975. p. 43.

Line graphs show how quantities, for example income or expenditure, vary over time or other variable.

Figure 2: Line Graph

Fig. 20-1. RESEARCH AND DEVELOPMENT FUNDS, BY PERFORMANCE SECTOR AND SOURCE: 1960 to 1975

(See table [illegible])



¹Preliminary

Source: Chart prepared by U.S. Bureau of Census. Data from U.S. National Science Foundation.

Sample query: Was 1963 the year of highest expenditure for NASA?

Answer: No. If you draw a line at right angle to the data line (labelled 1960-1975) from the point beginning with 1963, that line will intersect the curve at a point below its peak. The peak represents the year with the highest expenditure. Therefore, 1963 was not the year most money was spent for NASA.

Source: U.S. Bureau of the Census

Citation: Statistical Abstracts of the United States. U.S. Department of Commerce. 96th ed., 1975. p. 547.

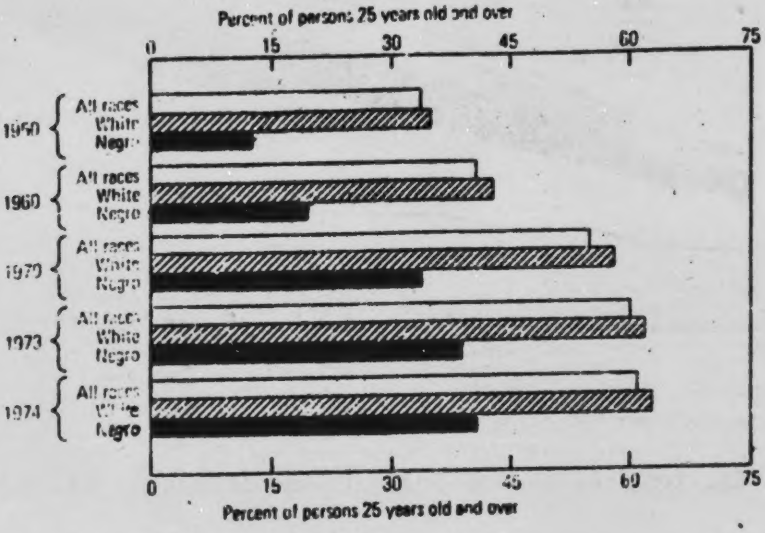
Bar graphs provide comparisons among data, for example, average cost of periodical subscriptions during different years. The bars may be vertical or horizontal.

Note that the same data may be presented either as a table or a line graph, or a bar graph.

Figure 3: Bar graph

Fig. 4-1. FOUR YEARS OF HIGH SCHOOL OR MORE COMPLETED BY ADULTS: 1950 to 1974

(See table 192)



Source: U.S. Bureau of the Census.

Sample query: What percentage of all persons 25 years or over had four years of high school or more education in 1960?

Answer: About 40 %. Take the bar marked "All races" for 1960 and measure its length on the percentage scale at the base of the graph. The bar ends about two thirds the distance between 30% and 45%, hence the answer is approximately 40%.

Source: U.S. Bureau of the Census

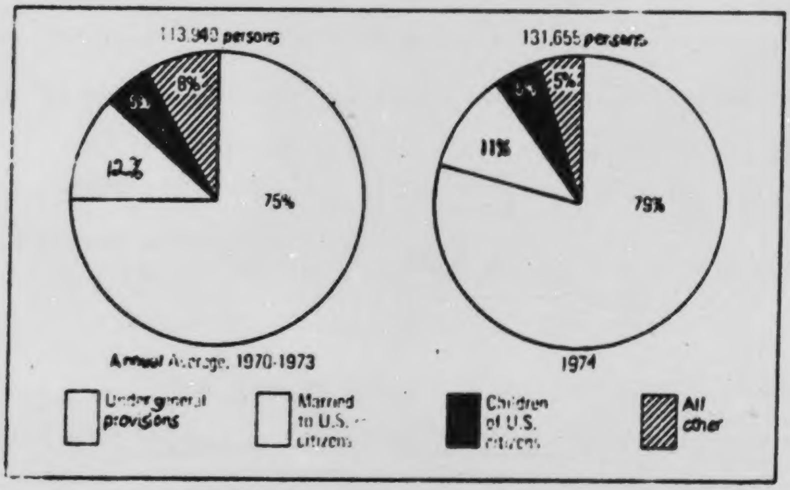
Citation: Statistical Abstracts of the United States. U.S. Department of Commerce. 96th ed., 1975. p. 109.

Circle graphs, sometimes called pie charts, show how data are divided among component parts (how the pie is cut up).

Figure 4: Circle graph

Fig. 3-2. ALIENS NATURALIZED: 1970 TO 1974

(See table 170)



Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. Immigration and Naturalization Service.

Sample query: What percentage of aliens were naturalized in 1974 as a result of being children of U.S. citizens?

Answer: 5% of persons naturalized in 1974.

Source: U.S. Immigration and Naturalization Service.

Citation: Statistical Abstracts of the United States. U.S. Department of Commerce. 96th ed., 1975. p. 96.

You may be asked to take this query a step further by giving the number of people so naturalized. Since the total number of naturalized citizens for 1974 is 131,655 (given on the chart), 5% of that would be 6,582. This is obtained by either dividing 131,655 by 20 or multiplying 131,655 by 0.05. Disregard numbers to the right of the decimal point. Fractions of people do not count.

Graphs are used to present information in a concise form. As the old saying goes, a picture is worth a thousand words. There are a few guidelines to keep in mind when selecting answers from graphs. These will now be given.

Guidelines for Selecting Answers from Graphs

1. Read the graph heading and explanatory notes before selecting information from it. This is essential to the selection of the correct answer from the graph.
2. Select answer from the correct portion on the graph. Avoid errors in copying numbers. It is good practice to double-check your answers when you have recorded them to avoid copying information from the wrong portion of the graph and/or to avoid errors of number transposition.
3. If the desired answer is not on the graph a "near" answer may be acceptable. For example, if the average cost of books published in the U.S. during the last year is not in the graph, supply the latest cost given in the graph.
4. Qualify the numeric answer with all of the necessary information given in the graph. That includes information in the heading as well as explanatory notes that may be anywhere in the graph. For example, if the temperature during a given month in a particular city is requested, copy the unit of measurement (degree Fahrenheit or Celsius), whether it is the average, high, low temperature, where the temperature was taken, and any other qualifications given in the graph.
5. Give source of information when stated. The source may or may not be given in the answer-providing tool. When given, it is usually either after the chart heading or as a footnote. The source of the graph is the individual or agency responsible for the collection of data, e.g., the U.S. Census Bureau. The citation gives the document where the information is contained, e.g., Statistical Abstracts of the U.S. The patron may want to refer to the original source for further information, or to consider it in estimating the reliability of the data in the graph.

6. In some cases, numbers on the graph need to be converted. For example, a percentage figure might have to be converted into number of units. This is done by simple multiplication or division.

   Example:

   Conversion of 20% of 4,000 into number of units by:

   (a) Multiply 4000 x 0.2 = 800

   (b) Division 4000 divided by 5(1/5) - 800

Another example of conversion of percentage figure into number of units is given with the sample query for Figure 4.

Query: How much has the weekly grocery bill increased for a family of four (with two children under five) since 1965?

Answer: ____________________

Determine the correct answer from the table below.

a. $20.20

b. $28.10

c. $49.60

d. $17.40

No. 691. Weekly Food Cost for Families, by Type of Family: 1965 to 1974

[**In dollars.** As of December. Based on moderate-cost food plan; assumes all meals are eaten at home or taken from home]

FAMILY TYPE	1965	1967	1968	1969	1970	1971	1972	1973	1974
Couple, 20-35 years old	20.20	20.80	21.60	23.10	23.20	24.20	25.40	30.80	34.40
Couple, 55-75 years old	17.20	17.60	17.90	19.40	19.40	20.20	21.20	25.70	28.40
Couple with children:									
1 child, 1-5 years old	25.10	25.80	26.80	28.70	28.80	30.00	31.40	38.20	42.50
1 child, 15-18 years old	29.50	29.90	30.90	33.20	33.30	35.00	36.60	44.40	49.40
2 children, 1-5 years old	29.40	30.30	31.40	33.60	33.70	35.10	36.80	44.70	49.60
2 children, 6-11 years old	34.00	35.00	36.40	39.10	39.20	40.90	42.90	52.00	58.10
2 children, 12-18 years old	37.50	38.40	39.80	42.90	42.90	44.90	47.10	57.10	63.60

Source: U.S. Agricultural Research Service, unpublished data.

MODULE VI: ANSWER SELECTION

Query: By about what percentage did domestic waterborne commerce increase during the years 1950 to 1970?

Answer: ________________

Determine the correct answer from the graph below.

a. About 300%

b. About 46%

c. About 33%

d. About 20%

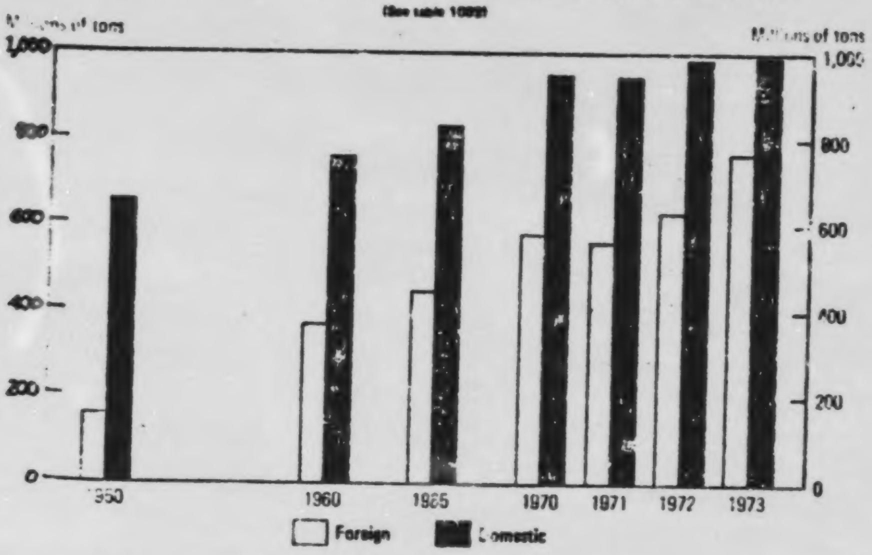


Fig. 22-2. WATERBORNE COMMERCE OF THE UNITED STATES: 1950 to 1973

(See table 1089)

Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. Corps of Engineers

MODULE VI: ANSWER SELECTION

Query: Property taxes represent what percentage of a state's revenue?

Answer: ______________

Determine the correct answer from the graph below.

a. 2.1%

b. 21%

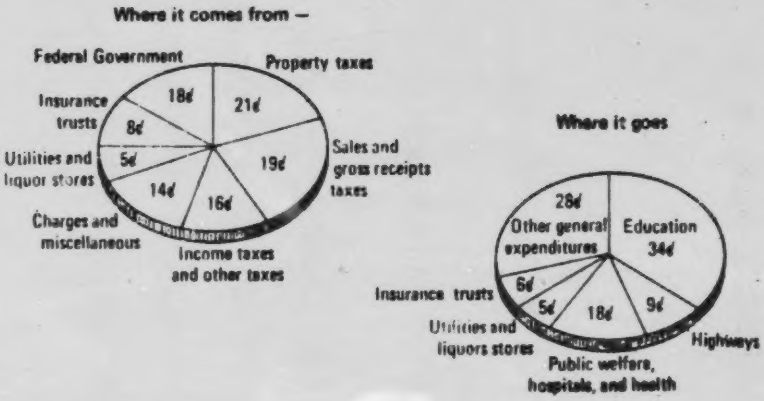
c. 79%

d. 18%

248 State and Local Finances and Employment

Fig. 9-1. THE STATE AND LOCAL GOVERNMENT DOLLAR: 1973

[See table 424]



Source: U.S. Bureau of the Census.

MODULE VI: ANSWER SELECTION

Query: In 1974 what was the least expensive metropolitan area in which a retired couple could live?

Answer: ________________

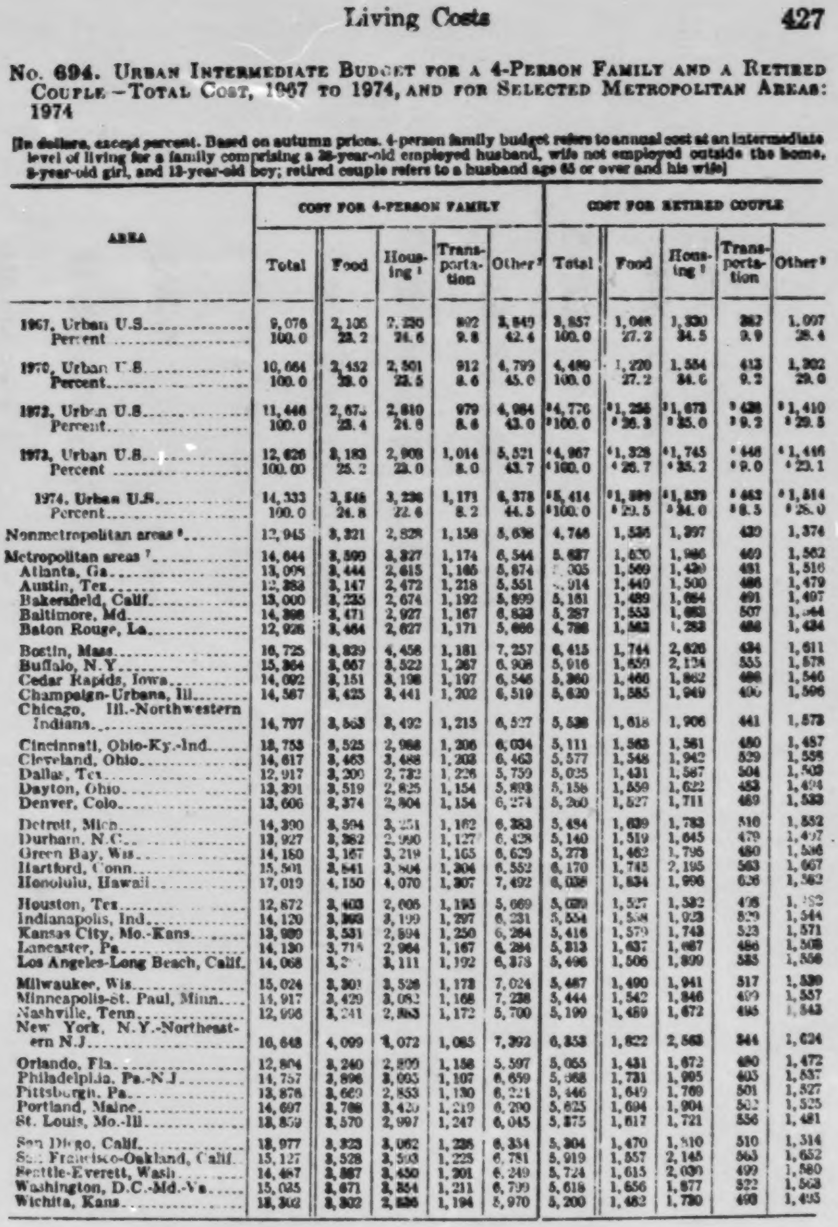
Select the correct answer from the table below.

a. Austin, Tex.

b. Baton Rouge, La.

c. Baltimore, Md.

d. Dallas, Tex.



Living Costs 427

No. 694. Urban Intermediate Budget for a 4-Person Family and a Retired Couple—Total Cost, 1967 to 1974, and for Selected Metropolitan Areas: 1974

[In dollars, except percent. Based on autumn prices. 4-person family budget refers to annual cost at an intermediate level of living for a family comprising a 38-year-old employed husband, wife not employed outside the home, 8-year-old girl, and 13-year-old boy; retired couple refers to a husband age 65 or over and his wife]

AREA	COST FOR 4-PERSON FAMILY					COST FOR RETIRED COUPLE				
	Total	Food	Housing [1]	Transportation	Other [2]	Total	Food	Housing [1]	Transportation	Other [3]
1967, Urban U.S.	9,076	2,105	2,230	802	3,849	3,857	1,048	1,330	382	1,097
Percent	100.0	23.2	24.6	8.8	42.4	100.0	27.2	34.5	9.9	28.4
1970, Urban U.S.	10,664	2,452	2,501	912	4,799	4,489	1,220	1,554	413	1,302
Percent	100.0	23.0	23.5	8.6	45.0	100.0	27.2	34.6	9.2	29.0
1972, Urban U.S.	11,446	2,673	2,810	979	4,984	[4]4,776	[4]1,256	[4]1,673	[4]438	[4]1,410
Percent	100.0	23.4	24.6	8.6	43.0	[4]100.0	[4]26.3	[4]35.0	[4]9.2	[4]29.5
1973, Urban U.S.	12,626	3,183	2,908	1,014	5,521	[4]4,967	[4]1,328	[4]1,745	[4]448	[4]1,446
Percent	100.00	25.2	23.0	8.0	43.7	[4]100.0	[4]26.7	[4]35.2	[4]9.0	[4]29.1
1974, Urban U.S.	14,333	3,546	3,236	1,171	6,378	[5]5,414	[5]1,599	[5]1,839	[5]462	[5]1,514
Percent	100.0	24.8	22.6	8.2	44.5	[5]100.0	[5]29.5	[5]34.0	[5]8.5	[5]28.0
Nonmetropolitan areas [6]	12,945	3,321	2,828	1,158	5,638	4,746	1,536	1,397	439	1,374
Metropolitan areas [7]	14,644	3,599	3,327	1,174	6,544	5,647	1,630	1,986	469	1,562
Atlanta, Ga.	13,098	3,444	2,615	1,165	5,874	5,305	1,569	1,420	481	1,516
Austin, Tex.	12,388	3,147	2,472	1,218	5,551	4,914	1,449	1,500	486	1,479
Bakersfield, Calif.	13,000	3,235	2,674	1,192	5,899	5,161	1,489	1,684	491	1,497
Baltimore, Md.	14,398	3,471	2,927	1,167	6,833	5,287	1,553	1,683	507	1,544
Baton Rouge, La.	12,928	3,464	2,627	1,171	5,666	4,786	1,583	1,283	486	1,434
Boston, Mass.	16,725	3,829	4,458	1,181	7,257	6,415	1,744	2,626	434	1,611
Buffalo, N.Y.	15,364	3,667	3,522	1,267	6,908	5,916	1,659	2,124	555	1,578
Cedar Rapids, Iowa	14,092	3,151	3,198	1,197	6,546	5,360	1,466	1,862	486	1,546
Champaign-Urbana, Ill.	14,587	3,425	3,441	1,202	6,519	5,620	1,585	1,949	490	1,596
Chicago, Ill.-Northwestern Indiana	14,797	3,563	3,492	1,215	6,527	5,538	1,618	1,906	441	1,573
Cincinnati, Ohio-Ky.-Ind.	13,753	3,525	2,988	1,206	6,034	5,111	1,563	1,561	480	1,487
Cleveland, Ohio	14,617	3,463	3,488	1,203	6,463	5,577	1,548	1,942	529	1,558
Dallas, Tex.	12,917	3,200	2,732	1,226	5,759	5,025	1,431	1,587	504	1,503
Dayton, Ohio	13,391	3,519	2,825	1,154	5,893	5,156	1,559	1,622	483	1,492
Denver, Colo.	13,606	3,374	2,804	1,154	6,274	5,260	1,527	1,711	489	1,533
Detroit, Mich.	14,390	3,594	3,251	1,162	6,383	5,484	1,639	1,783	510	1,552
Durham, N.C.	13,927	3,382	2,990	1,127	6,428	5,140	1,519	1,645	479	1,497
Green Bay, Wis.	14,180	3,167	3,219	1,165	6,629	5,273	1,462	1,795	480	1,536
Hartford, Conn.	15,501	3,841	3,804	1,304	6,552	6,170	1,745	2,195	563	1,667
Honolulu, Hawaii	17,019	4,150	4,070	1,307	7,492	6,028	1,834	1,996	636	1,562
Houston, Tex.	12,672	3,403	2,405	1,195	5,669	5,009	1,527	1,532	498	1,452
Indianapolis, Ind.	14,120	3,393	3,199	1,297	6,231	5,554	1,558	1,923	529	1,544
Kansas City, Mo.-Kans.	13,639	3,531	2,594	1,250	6,264	5,416	1,579	1,743	523	1,571
Lancaster, Pa.	14,130	3,715	2,964	1,167	6,284	5,313	1,637	1,667	486	1,503
Los Angeles-Long Beach, Calif.	14,068	3,2[illegible]	3,111	1,192	6,378	5,496	1,506	1,899	535	1,556
Milwaukee, Wis.	15,024	3,301	3,526	1,173	7,024	5,467	1,490	1,941	517	1,519
Minneapolis-St. Paul, Minn.	14,917	3,429	3,082	1,168	7,238	5,444	1,542	1,846	499	1,557
Nashville, Tenn.	12,996	3,241	2,883	1,172	5,700	5,199	1,489	1,672	495	1,543
New York, N.Y.-Northeastern N.J.	16,648	4,099	4,072	1,085	7,392	6,353	1,822	2,563	344	1,624
Orlando, Fla.	12,804	3,240	2,809	1,158	5,597	5,065	1,431	1,672	490	1,472
Philadelphia, Pa.-N.J.	14,757	3,896	3,095	1,107	6,659	5,568	1,731	1,895	405	1,537
Pittsburgh, Pa.	13,876	3,669	2,853	1,130	6,224	5,446	1,649	1,769	501	1,527
Portland, Maine	14,697	3,768	3,420	1,219	6,290	5,625	1,694	1,904	502	1,525
St. Louis, Mo.-Ill.	13,859	3,570	2,997	1,247	6,045	5,375	1,617	1,721	556	1,481
San Diego, Calif.	13,977	3,323	3,062	1,238	6,354	5,304	1,470	1,810	510	1,514
San Francisco-Oakland, Calif.	15,127	3,528	3,593	1,225	6,781	5,919	1,557	2,145	563	1,652
Seattle-Everett, Wash.	14,487	3,587	3,450	1,201	6,249	5,724	1,615	2,030	499	1,580
Washington, D.C.-Md.-Va.	15,035	3,671	3,354	1,211	6,799	5,618	1,656	1,877	522	1,563
Wichita, Kans.	13,302	3,302	2,836	1,194	5,970	5,200	1,482	1,730	498	1,490

Query: What has been the percentage of increase in total expenditures on education since 1960?

Answer: ____________

Determine the correct answer from the graph below.

a. About 85%

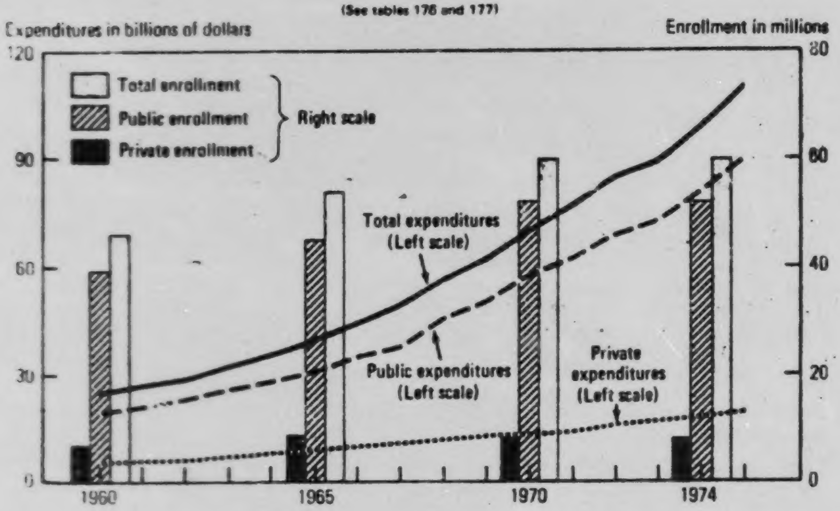
b. About 100%

c. About 275%

d. About 340%

Fig. 4-2. PUBLIC AND PRIVATE SCHOOL ENROLLMENT AND EXPENDITURES: 1960 to 1975

(See tables 176 and 177)



Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. Bureau of the Census and U.S. Office of Education.

MODULE VI: ANSWER SELECTION

Query: What is the current rate of suicide in the U.S.?

Answer: ______________

Determine the correct answer from the graph below.

a. 13 per 100,000

b. 15 per 100,000

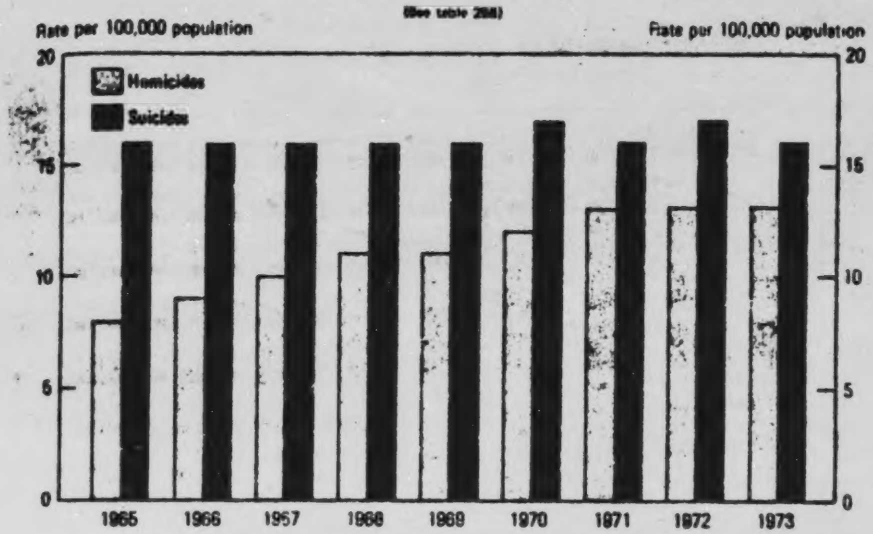
c. 16 per 100,000

d. 29 per 100,000

Law Enforcement, Federal Courts, and Prisons 149

Fig. 5-1. HOMICIDE AND SUICIDE RATES: 1965 to 1973

(See table 298)



Source: Chart prepared by U.S. Bureau of the Census. Data from the U.S. Public Health Service.

MODULE VI: ANSWER SELECTION

Query: Approximately how many people traveled on airlines in the United States during 1970?

Answer: ______________

Determine the correct answer from the graph below.

a. 150 million

b. 7 billion

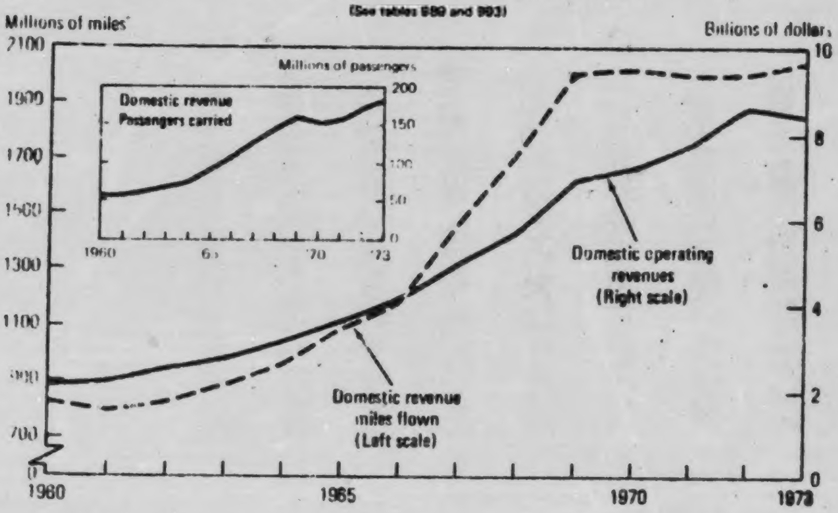
c. 1600 million

d. Answer cannot be determined from graphs

Transportation—Air and Water 589

Fig. 22-1. DOMESTIC SCHEDULED AIR CARRIERS – REVENUES, MILES FLOWN, AND PASSENGERS CARRIED: 1960 to 1973

(See tables 589 and 593)



Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. Federal Aviation Administration.

Query: About how many farms are there in the United States today compared with 25 to 30 years ago?

Answer: ______________

Determine the correct answer from the graph below?

a. 2.7 million

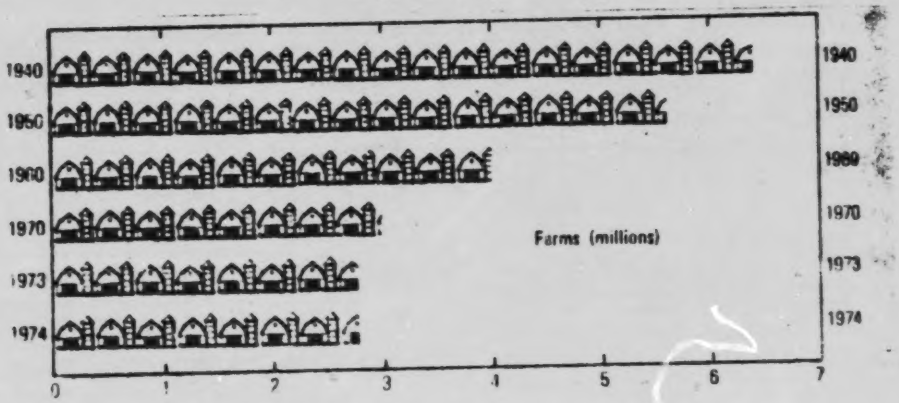
b. 5 million more

c. 3 million less

d. 1.3 million less

Agriculture

Fig. 23-1. CHANGES IN FARMING: 1940 TO 1974



MODULE VI: ANSWER SELECTION

Query: The birth rate in Puerto Rico declined during the years 1965 to 1973 by what percent?

Answer: ______________

Determine the correct answer from the graph below.

a. 7%

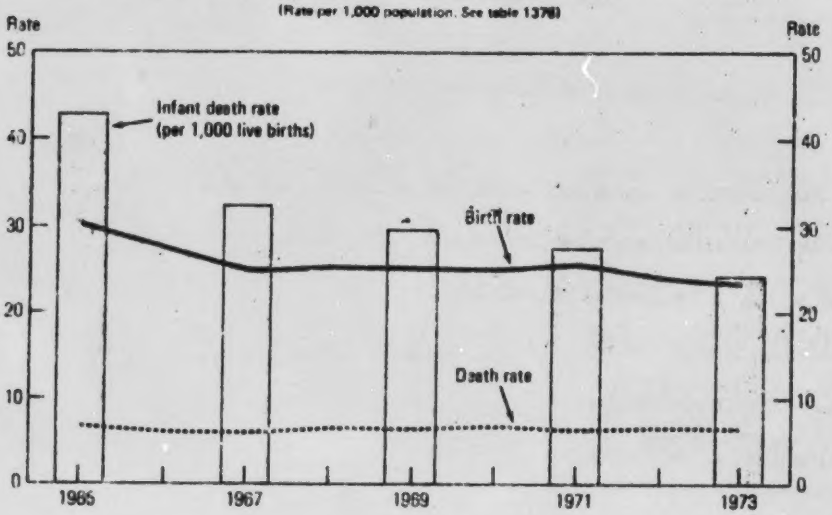
b. 17%

c. 23%

d. 29%

Fig. 31-2. BIRTH AND DEATH RATES FOR PUERTO RICO: 1965 TO 1973

(Rate per 1,000 population. See table 1378)



Source. Chart prepared by U.S. Bureau of the Census. Data from U.S. National Center for Health Statistics.

MODULE VI: ANSWER SELECTION

Query: How many more married women are in the U.S. labor force at the present than were employed in 1950?

Answer: ______________

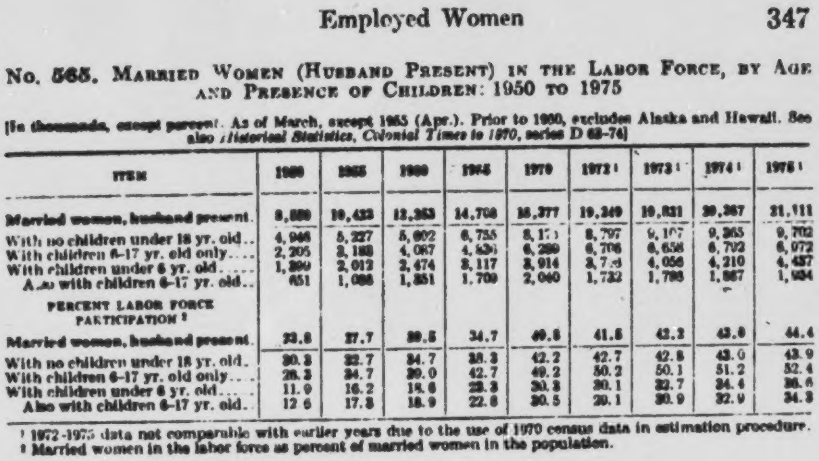
Determine the correct answer from the table below.

a. 12,561

b. 21,111,000

c. 12,561,000

d. 1,256,100



Employed Women 347

No. 565. Married Women (Husband Present) in the Labor Force, by Age and Presence of Children: 1950 to 1975

[In thousands, except percent. As of March, except 1965 (Apr.). Prior to 1960, excludes Alaska and Hawaii. See also *Historical Statistics, Colonial Times to 1970*, series D 63-74]

Item	1950	1955	1960	1965	1970	1972 [1]	1973 [1]	1974 [1]	1975 [1]
Married women, husband present	8,550	10,423	12,253	14,708	18,377	19,249	19,821	20,267	21,111
With no children under 18 yr. old	4,946	5,227	5,692	6,755	[illegible]	8,797	9,107	9,265	9,702
With children 6-17 yr. old only	2,205	3,183	4,087	[illegible]	6,289	6,706	6,658	6,792	6,972
With children under 6 yr. old	1,399	2,012	2,474	3,117	3,914	[illegible]	4,056	4,210	4,437
Also with children 6-17 yr. old	651	1,086	1,251	1,709	2,040	1,732	1,793	1,867	1,934
PERCENT LABOR FORCE PARTICIPATION [2]									
Married women, husband present	23.8	27.7	30.5	34.7	40.8	41.5	42.2	43.0	44.4
With no children under 18 yr. old	30.3	32.7	34.7	38.3	42.2	42.7	42.8	43.0	43.9
With children 6-17 yr. old only	28.3	34.7	39.0	42.7	49.2	50.2	50.1	51.2	52.4
With children under 6 yr. old	11.9	16.2	18.6	23.3	30.3	30.1	32.7	34.4	36.6
Also with children 6-17 yr. old	12.6	17.3	18.9	22.8	30.5	30.1	30.9	32.9	34.3

[1] 1972-1975 data not comparable with earlier years due to the use of 1970 census data in estimation procedure.
[2] Married women in the labor force as percent of married women in the population.

Answers to MODULE VI : ANSWER SELECTION

1. (a) $20.20. Data are given up to 1974 only.
2. (b) Approximately 46% increase. (1950=650, 1970=950)
3. (b) 21%.
4. (b) Baton Rouge, La.; $4788.
5. (d) Approximately 340% increase. (1960=25 billion, 1974=110 billion)
6. (c) About 16 persons per 100,000. No data more current than 1973.
7. (a) About 150 million passengers traveled on scheduled domestic airlines.
8. (c) About 3 million less. (1950=5.7 million, 1974=2.7 million)
9. (a) Approximately a 7% decline. (1965=30, 1973=23)
10. (c) 12,561,000 more than in 1950. 1975 figures are an estimate based on 1970 census.

Appendix D

"THE WAY TO NEGOTIATE"

Script for a Videotape

Prepared
by
Dr. Judith Braunagel

VOICEOVER: Begins as titles are shown, if necessary continues as the camera focuses on the reference librarian, sitting at the reference desk, working with papers, etc.

This videotape contains two simulated reference interviews between a reference librarian and library patrons. These simulations are meant to illustrate strategies of query negotiation of varying effectiveness, by showing decision-making points and specific interview techniques. The first interview illustrates poor techniques of query negotiation, while the second shows elements in a well-negotiated query.

Viewers should supplement the material on this videotape with the negotiation stencil and negotiation checklist.

9

Patron. Sitting down next to a friend at a study table.	HI, NED. HOW ARE YOU DOING ON THAT PAPER?
Friend	ALMOST HAVE IT DONE. HAVE YOU FINISHED YOURS' YET?
Patron 1	NO, I'VE HARDLY STARTED.
Friend.	WHAT HAVE YOU BEEN DOING? IT'S DUE NEXT WEEK!
Patron 1	I KNOW, I KNOW. BUT I'VE BEEN GETTING SLEEPY EVERY NIGHT AFTER I GET HOME FROM WORK AND I HAVEN'T FELT LIKE WORKIN ON IT.
Friend	WHAT'S THE MATTER? WHY CAN'T YOU STAY AWAKE?
Patron 1	WELL, IT COULD BE SOME NEW MEDICINE I'VE BEEN TAKING . . . .
Friend	WHAT ARE YOU TAKING?
Patron 1 Hesitantly.	I WASN'T GOING TO TELL ANYBODY 'CAUSE I DON'T WANT MY PARENTS TO FIND OUT, BUT THE DOCTOR PUT ME ON TRANQUILIZERS -- VALIUM!
Friend	WHY DON'T YOU ASK THE DOCTOR ABOUT IT?
Patron	I PROBABLY WILL, BUT, I HATE TO SPEND ANOTHER $15 TO GO IN TO SEE HIM IF THE VALIUM ISN'T CAUSING IT AND IT'S JUST MY LAZINESS.
Friend	WELL, WHILE WE'RE IN THE LIBRARY WHY DON'T YOU LOOK VALIUM UP AND SEE IF IT COULD CAUSE DROWSINESS. IF IT CAN, THEN

3

	COULD GO IN AND SEE YOUR DOCTOR ABOUT GETTING A NEW PRESCRIPTION.
Patron 1	THAT'S A GOOD IDEA. WHERE SHOULD I LOOK, THOUGH?
Friend	I DON'T KNOW. MAYBE IT WOULD BE LISTED IN *CHEMICAL ABSTRACTS*.
Librarian He/she is writing and working with sheets of paper.	
Patron 1 Wanders past the desk, obviously confused about using the library	
Librarian Does not look up at patron.	
Patron 1 Approaches the desk hesitantly.	EXCUSE ME. . . .
Waits for a few moments, but librarian does not notice him.	
Librarian Continues to glance at the papers she/he was working on. Sits slumped in chair.	YES, MAY I HELP YOU?
Patron 1	DO YOU HAVE *CHEMICAL ABSTRACTS*
Librarian	YES, WE DO. IT'S ON INDEX TABLE H.
Patron 1 Goes to find Index Table H.	
Patron 2 Approaches desk.	HAS THE NEWEST *SCIENTIFIC AMERICAN* COME IN YET? I DIDN'T SEE IT ON THE SHELF.
Librarian	PROBABLY NOT. IT USUALLY DOESN'T COME IN UNTIL THE END OF THE WEEK.

4

Patron 2

Seems disappointed, walks away.

OH. O.K., THANKS.

Patron 3

WHERE ARE THE COPY MACHINES?

Librarian

Testily. Speaking as if by rote.

GO PAST THE CARD CATALOG, TO THE LEFT AND DOWN THE STAIRS. THEY"RE IN THE FIRST ROOM TO THE RIGHT.

Patron 3

WHICH WAY IS THE CARD CATALOG? I'VE NEVE USED THIS LIBRARY BEFORE.

Librarian

Points, but does not look up.

OVER THERE.

Patron 3

Wanders off uncertainly.

Patron 4

I NEED SOME HELP. I'M DOING RESEARCH ON WALT WHITMAN, AND I WANT TO LOCATE AN AVAILABLE MATERIAL CONCERNING THE EFFECT OF HIS HOMOSEXUALITY ON HIS POETRY.

Librarian

Reacts to the question with uneasiness and is slightly offended.

WELL, I DOUBT THAT TOO MUCH HAS BEEN WRITTEN ABOUT THAT. WHY DON'T YOU LOOK IN THE CARD CATALOG UNDER WALT WHITMAN; THERE MAY BE SOME BOOKS ABOUT HIS POETRY LISTED.

Turns away.

Patron 4

Discouraged

I'VE ALREADY CHECKED THE BOOKS IN THE CARD CATALOG. NONE OF THEM DISCUSS HIS HOMOSEXUALITY IN ENOUGH DETAIL. ISN'T THERE SOMEWHERE ELSE I COULD LOOK?

Librarian Somewhat anxious to end the discussion.	I DOUBT THAT WE HAVE ANYTING IN OUR COLLECTION THAT WOULD GO INTO THAT. WHY DON'T YOU TRY THE STATE LIBRARY?
Patron 4 Disappointed	WELL, I GUESS I'LL HAVE TO TRY THAT. THANKS FOR YOUR HELP.
Patron 1 Passes the reference desk again, on his way to leave the reference section of the library.	
Librarian Staying behind the desk; almost has to shout for the patron to hear since he's several feet away.	DID YOU FIND WHAT YOU WANTED IN CHEMICAL ABSTRACTS?
Patron 1	NOT REALLY, BUT IT's NOT THAT IMPORTANT...
Starts to leave.	
Librarian	WELL, MAYBE I CAN HELP YOU. WERE YOU LOOKING FOR INFORMATION ON A CHEMICAL?
Patron 1 Opening up a little. He's hoping maybe she can help him.	NO, NOT REALLY...
Librarian	WHAT WERE YOU TRYING TO FIND?
Patron 1	I WAS LOOKING FOR SOME INFORMATION ON DRUGS.
Librarian	PERHAPS YOU DIDN'T USE THE RIGHT SUBJECT HEADING. DID YOU LOOK UNDER THE WORD "DRUGS" OR SOME OTHER TERM?

Patorn 1	WELL, ACTUALLY, I COULN'T FIGURE OUT HOW TO USE IT.
Librarian	WOULD YOU LIKE ME TO SHOW YOU?
Patron 1	NO, I DON'T REALLY HAVE TIME TO TRACK DOWN ANY ARTICLES NOW ANYWAY.
Indicates he's about to leave.	
Librarian	WELL, POSSIBLY WE COULD FIND THE INFORMAT YOU NEED SOMEWHERE ELSE. ARE YOU WRITING A TERM PAPER?
Patron 1 Seems like he is about to tell her what he's really trying to find out.	NO, I JUST...
Librarian Interrupting him. She's getting impatient.	WELL, IS IT FOR A PAPER OR FOR SOMETHING ELSE?
Patron 1 Getting defensive.	I JUST NEEDED TO FIND OUT ABOUT THEM.
Librarian	HOW MUCH INFORMATION DID YOU WANT ON DRUGS?
Patron 1	NOT MUCH. JUST ENOUGH TO KNOW A LITTLE ABOUT THEM: THEIR SIDE EFFECTS AND ALL.
Librarian Ignoring the hint toward the real query.	O.K. I'VE GOT A BOOK HERE ON THE READY REFERENCE SHELF THAT HAS INFORMATION ON DRUGS. WHY DON'T YOU LOOK AT IT.

Patron 1

Takes the book to another table. Flips through the book, looks at the index under Valium. When he sees the librarian isn't looking, he gets up and leaves the book on the table. Goes out.

8

Well-Negotiated Query

Patron

Walks slowly past the reference desk, hesitates as if considering asking a question, but starts to walk on.

Librarian

Looks up, puts down papers s/he was handling.

COULD I HELP YOU?

Patron

Uneasy; he didn't really want to disturb the librarian

I JUST WANTED TO FIND THE COLLEGE CATALOGS.

Librarian

THEY ARE OVER HERE.

Gets up from behind the desk and walks a few steps toward them.

DO YOU WANT TO LOOK AT ANY SPECIFIC CATALOG?

Patron

Easing up a little bit - the librarian might be able to help him after all.

CARNEGIE-MELLON, I THINK.

Librarian

Sensing his need for further help.

HERE IS THE CATALOG FOR CARNEGIE-MELLON. WHAT TYPE OF INFORMATION ARE YOU INTERESTED IN FINDING?

Patron

I NEED TO LOOK UP THE NAMES OF TWO PROFESSORS: FUGOSSI AND CONROY.

Librarian	WHAT DO YOU WANT TO KNOW ABOUT THEM?
Patron	WELL, I NEED TO KNOW WHICH OF THEM SPECIALIZES IN PROPERTIES OF COAL.
Librarian Nods and indicates attention	
Patron Frustrated, because he doesn't feel he has enough information to find anything out about these people	ACTUALLY, I'M NOT EVEN SURE IF THEY WORK AT CARNEGIE-MELLON OR SOMEWHERE ELSE.
Librarian	PERHAPS WE CAN ALSO LOOK FOR THEM IN ANOTHER SOURCE IF THEY'RE NOT LISTED IN THE CATALOG. YOU WOULD LIKE TO KNOW WHICH OF THESE TWO IS A SPECIALIST IN THE PROPERTIES OF COAL?
Patron	YEAH.
Librarian	IS THERE ANYTHING ELSE YOU'D LIKE TO FIND OUT ABOUT THEM?
Patron	WELL, I SHOULD PROBABLY READ A COUPLE OF ARTICLES BY THE ONE WHO'S THE COAL SPECIALIST.
Librarian	ALL RIGHT, WE CAN TRY TO FIND SOME ARTICLES. WHAT TYPE OF INFORMATION ARE YOU HOPING TO FIND IN THE ARTICLES?
Patron	I'M TRYING TO WRITE A PAPER FOR MY GEOLOGY CLASS, AND THE PROFESSOR

10

	SAID THIS GUY AT CARNEGIE-MELLON IS REALLY WELL KNOWN AND I COULD USE HIM AS A REFERENCE.
Librarian	WHAT IS YOUR PAPER ABOUT?
Patron	IT'S ABOUT COAL FORMATIONS.
Librarian Beginning to realize that he was not asking for what he really needed.	THEN YOU'D LIKE TO READ THE ARTICL BY THIS SPECIALIST TO GATHER MATERIAL FOR YOUR PAPER?
Patron Pleased that s/he may be able to help him even tho he didn't have very much information to give her.	YES.
Librarian	COULD YOU USE INFORMATION ABOUT COAL FORMATION FROM OTHER SOURCES AS WELL?
Patron	OH SURE. MY PROFESSOR WAS JUST TRYING TO HELP ME GET STARTED ON THE PAPER.
Librarian	WE CAN FIND SOME INFORMATION ABOUT COAL FORMATION IN SOME ADDITIONAL SOURCES THEN. HOW WILL YOU BE TREATING COAL FORAMTIONS IN YOUR PAPER?
Patron	IT WILL BE ABOUT COAL FORMATIONS IN THE SOUTHEASTERN UNITED STATES. I NEED TO TELL WHERE THEY ARE AND HOW LONG THEY WILL LAST.
Librarian	WILL YOU COVER ANYTHING ELSE IN YOUR PAPER?

11

Patron	THAT'S ALL. I JUST HAVE TO TELL HOW MUCH COAL THERE IS IN THAT REGION AND HOW LONG IT WILL PROVIDE US WITH FUEL. FOR THE REST I'M SUPPOSED TO WRITE MY OPINIONS ON USING IT WISELY.
Librarian	SO, YOU NEED TO HAVE DATA ON THE LOCATION AND AMOUNT OF COAL RESERVES IN THE SOUTHEASTERN UNITED STATES?
Patron	YES, THAT'S RIGHT.
Librarian Gets a book from the ready reference shelf next to the desk.	THIS BOOK SHOWS THE RESERVES IN 1974. IS THAT CURRENT ENOUGH FOR YOUR PAPER?
Patron Happy to have something to start working with	YES, THAT WILL DO FINE.
Librarian	WOULD YOU STILL LIKE INFORMATION ABOUT OR ARTICLES BY THE COAL SPECIALIST AT CARNEGIE-MELLON.
Patron	NOT NOW ANYWAY. I MAY BE ABLE TO DO THE PAPER WITHOUT IT.
Librarian	I'LL LEAVE YOU WITH THIS BOOK THEN. IF YOU NEED ANYTHING ELSE PLEASE ASK.
Patron	O.K., THANKS.

5/13

GOOD NEGOTIATION

______ Librarian uses open questions in the initial stages of negotiation

______ Encourages patron to discuss his information need

______ Summarizes or paraphrases the patron's query to insure mutual understanding

______ Makes eye contact with patron

______ Gives patron full attention

______ Remains objective about the content of the query

______ Attempts to make patron to feel at ease

______ Follows the patron's line of thought

______ Shows empathy for the patron

______ Is aware of nonverbal clues

POOR NEGOTIATION

______ Librarian interrupts patron as he attempts to discuss his information needs

______ Uses closed questions too early in the interview

______ Doesn't give patron full attention

______ Reacts subjectively to the content of the query

______ Is too quick to state that the query cannot be answered

______ Places patron on the defensive

______ Exhibits uneasiness in working with patron

Appendix E

A SURVEY OF REFERENCE QUERIES ANSWERED IN PUBLIC LIBRARIES

Gerald Jahoda, Miguel Menendez,
Afarin Sharavan and Vicki West

School of Library Science
Florida State University

August 1976

ABSTRACT

A preliminary analysis is given of 1658 reference queries answered in 27 U.S. public libraries in 1976. The queries are grouped according to an indexing scheme developed for teaching the message selection step of the reference process. About four out of ten queries were for general background on a subject, about a third of the queries were for facts other than publication facts, one out of ten queries were about specific publications and the remaining queries were about words or phrases, their meaning, translation, or use.

This study was supported with U.S. Office of Education Grant #OEG-0- 75-00619.

ACKNOWLEDGMENT

The assistance of the librarians in the 27 libraries listed in Appendix C is gratefully acknowledged. It goes without saying that without their help, this study would not have been possible.

A SURVEY OF REFERENCE QUERIES ANSWERED IN PUBLIC LIBRARIES

In 1976, a number of public libraries in the United States were asked to submit records of queries answered during a week or less. The objectives of this survey were to collect queries for use by students in reference courses and for studying search strategy used in answering reference queries. The preliminary analysis of the queries may be of interest to both participating librarians as well as others and that is the reason for this report.

In February 1976, 64 U.S. public libraries serving populations of 100,000 to 500,000 were asked to submit records of 60 to 75 queries answered during the period of a week or less. Records of all queries except directional ones were asked to be submitted. For each query submitted, the library was to record on a form the query as originally received, the negotiated query as answered (when applicable), and the answer and/or bibliographic citation provided. The initial letter with instructions for completing the form, and a copy of the form are given in Appendix A and B respectively. The libraries were selected from the 1974-1975 American Library Directory (1). Sampling was started on page five of the Directory and continued every fifth page to the end of the volume. A library was selected if it met the criteria for being a public library serving a population of 100,000 to 500,000 and if its entry started on the sample page. One public library that met the sampling criteria was excluded because it participated in another survey at the time of our study. Twenty-eight public libraries agreed to participate in the survey and 27 out of the 28 libraries sent records of 1787 queries. Of these 1787 queries, 38 directional queries, 22 queries that were incompletely recorded, and 69 queries that were unanswered had to be discarded, leaving a total of 1658 usable queries.

---

(1) R.R. Bowker Co., New York, 1974.

Query Indexing

The 1658 queries are indexed by a scheme developed as part of a project designed to teach the decision-making steps in the reference process. The reference process is divided into the following decision-making steps:

(1) Message selection from the query statement

(2) Identification of queries to be negotiation and query negotiation

(3) Selection of types of answer-providing tools

(4) Selection of specific answer-providing tool with the aid of lead-in tools

(5) Selection of search headings

(6) Selection of answer

In the message selection step, key words or phrases in the query statement are selected with the aid of broad concepts called "wanted descriptors" and "known descriptors." Message words are divided into two broad categories: words that identify what is wanted and words that identify what is given or known. For example, in the query statement "What is the home address of Presidential candidate Jimmy Carter?" , "home address" identifies what is wanted and "Presidential candidate Jimmy Carter" identifies what is given or known in the query. These wanted and known terms in query statements have, in turn, been translated into the broader concepts of wanted and known descriptors. In the above example, the wanted descriptor is "addresses" and the known descriptor is "persons." The list of wanted and known descriptors is reproduced in Table 1.

In Table 3, the 1658 queries collected are first grouped by wanted descriptors. The wanted descriptor is given in all capital letters in the center of the page. The second breakdown is by known descriptor which

TABLE 1

LIST OF WANTED AND KNOWN DESCRIPTORS

WANTEDS (Types of Expected Answers)

Dates (specific dates)
Events (involving people)
Illustrations
Numeric information
  a. properties (scientifically measured)
  b. statistics (involving counting) and other
Organizations
Persons
Addresses and general locations
Publications
  a. citations (including bibliographies)
  b. document locations
  c. verification or completion of bibliographic data
Terms or subjects
  a. abbreviations
  b. words, phrases, definitions
  c. abstracts, annotations, recommendation of publications
  d. general or background information
Unspecified or other

KNOWNS (Types of Access Points)

Abbreviations
Dates (specific dates)
Events (involving people)
Illustrations
Organizations (specifically named; includes corporate authors)
Persons (specifically named; includes authors)
Places
Terms or subjects (other than specific types already listed)
Titles of publications (specifically named)
Unspecified or other

is labelled as such. The third breakdown is by sub-category within known descriptor, again labelled as such. For each of the three categories -- wanted descriptors, known descriptors, and sub-categories -- both the number of queries and the percentage of the total number of 1658 queries are given. An example of a query is given for the lowest breakdown within the wanted descriptor. This may be the wanted descriptor, the known descriptor or the sub-category.

Discussion of Results

While a relatively large number of queries were collected over a short period of time, no claim can be made that these queries are a representative sample of queries answered in public libraries. A test of significance would entail a second sampling of the libraries to determine whether similar results are obtained. This is not planned at this time. Despite this limitation of the survey, some general comments about the queries will be made.

To provide a profile of the queries answered by the 27 public libraries, the 1658 queries have been put into four types. This was done by combining the queries listed under the 14 wanted descriptors into the four types of queries given in Table 2. The most frequent type of query was the "general background on a subject" query. Over four out of ten queries fell into this group. Next in frequency was the query for factual information other than facts about publications. About a third of all of the queries dealt with facts about people, organizations or products. Queries about specific publications or parts of publications, recommendations, abstracts, and verification accounted for about one out of ten queries. The remaining queries, also about one out of ten, were about words or phrases, their definition, translation, or usage.

Table 2

TYPES OF QUERIES

Query Type	Percentage of Total Queries
Background information on a subject (General information)	41.1 %
Facts other than about publications (Addresses/locations, dates, events, organizations, persons, properties, statistics)	36.0 %
About specific publications (Abstracts, annotations, recommendations, citations, illustrations, verification)	13.6 %
About words and abbreviations (Words, phrases, abbreviations)	9.2 %

Further analysis of the records of the queries is planned. We will look at the queries in terms of types of answer-providing tools, e.g. directories, that were used for answering the different types of queries. Then we will list alternative types of tools that either were or could have been used for answering different types of queries. If time permits, the same queries will be searched with different types of tools to collect data that might be of assistance in developing search strategy for answering reference queries. The queries will also be examined in terms of type of training required for answering them. A preliminary analysis led to the conclusion that subject training (graduate or undergraduate training in a subject) is not required for answering these queries. We are also interested in learning what portion of the queries require training in library science and what portion of the queries can be answered by persons without such training.

TABLE 3

QUERIES GROUPED BY DESCRIPTORS

Explanation of entry format:

	Wanted Descriptor	Number of Queries in Category	Percentage of Total Usable Queries
CATEGORY GROUPING:	ADDRESSES OR LOCATIONS	216	(15.7%)
CATEGORY:	KNOWN: Organizations	167	(10.1%)
SUB CATEGORY:	SUB CATEGORY: Education	20	(1.2%)

EXAMPLE: What is the address for Lafayette College in Pennsylvania?

ABBREVIATIONS 1 (.1%)

KNOWN: Terms/subjects 1 (.1%)
EXAMPLE: What is the abbreviation for birth certificate?

ABSTRACTS, ANNOTATIONS, RECOMMENDATIONS 53 (3.2%)

KNOWN: Persons 30 (1.8%)
EXAMPLE: How do I find critical essays on John Steinbeck?

KNOWN: Terms/subjects 5 (.3%)
EXAMPLE: Do you have anything which would index Biblical references in literature?

KNOWN: Titles 18 (1.1%)
EXAMPLE: I want a synopsis of the opera "Die Meistersinger Von Nurnberg."

ADDRESSES OR LOCATIONS 261 (15.7%)

KNOWN: Organizations 167 (10.1%)

SUB CATEGORY: Business/Trade 95 (5.7%)
EXAMPLE: Can you give me the addresses for the following companies - Revlon, Cover Girl, Clairol, Max Factor?

SUB CATEGORY: Education 20 (1.2%)
EXAMPLE: What is the address for Lafayette College in Pennsylvania?

SUP CATEGORY: Government 23 (1.4%)
EXAMPLE: I want the correct address of the Federal Communications Commission in Washington, D.C.

SUB CATEGORY: Professional Organizations 10 (.6%)
EXAMPLE: Do you have the address of the Major League Baseball Players Association?

SUB CATEGORY: Services 19 (1.1%)
EXAMPLE: I need the address of the Rockefeller Foundation.

ADDRESSES OR LOCATIONS (Cont.)

KNOWN: Persons 45 (2.7%)

SUB CATEGORY: Government 17 (1.0%)
EXAMPLE: Do you have the Washington, D.C. address of Senator Proxmire?

SUB CATEGORY: Professionals 10 (.6%)
EXAMPLE: Do you have Ralph Nader's address?

SUB CATEGORY: Names in news (not govt. and prof.) 10 (.6%)
EXAMPLE: What is the address of Bob Hope?

SUB CATEGORY: Other 8 (.5%)
EXAMPLE: What is the address of John L. McKenzie, a priest?

KNOWN: Places 41 (2.5%)

SUB CATEGORY: Addresses/Locations 41 (2.5%)
EXAMPLE: What is the address of the new Niagara Falls, N.Y. Convention Center?

KNOWN: Titles of publications 8 (.5%)
EXAMPLE: I need the address of Bits and Pieces magazine.

CITATIONS 27 (1.6%)

KNOWN: Persons (authors) 16 (1.0%)
EXAMPLE: Can you give me a list of the complete writings of Mark Twain?

KNOWN: Terms/subjects 8 (.5%)
EXAMPLE: Do you have a list of periodicals that deal with children's literature?

KNOWN: Titles 3 (.2%)
EXAMPLE: What is the official title of the Prohibition Act?

DATES 49 (3.0%)

KNOWN: Dates 4 (.2%)
EXAMPLE: What is the date of the Sunday before the first Monday in January 1981?

KNOWN: Events 22 (1.3%)
EXAMPLE: What was the date of Easter in 1955?

DATES (Cont.)

KNOWN: Persons 10 (.6%)
EXAMPLE: When did Judy Garland die?

KNOWN: Terms/subjects 13 (.8%)
EXAMPLE: When were Kennedy half-dollars first minted?

DOCUMENT LOCATION 40 (2.4%)

EXAMPLE: Does the library have the lyrics and music to "You're a Grand Old Flag"?

EVENTS 10 (.6%)

EXAMPLE: What famous event took place during Thomas Jefferson's presidency?

GENERAL INFORMATION 682 (41.1%)

KNOWN: Events 10 (.6%)
EXAMPLE: I need a list of Olympic events in which women participate.

KNOWN: Organizations 42 (2.5%)

SUB CATEGORY: Business 18 (1.1%)
EXAMPLE: What is the correct name of Zayre Corporation?

SUB CATEGORY: Education 8 (.5%)
EXAMPLE: Do you have any information on Al-Azhar University in Cairo?

SUB CATEGORY: Government 4 (.2%)
EXAMPLE: I need information on the U.S. National Health Service Corps and their program.

SUB CATEGORY: Professionals 3 (.2%)
EXAMPLE: Is the South Carolina Society of Poets legitimate?

SUB CATEGORY: Services 9 (.5%)
EXAMPLE: Do you have any information on St. Jude's Children's Hospital?

GENERAL INFORMATION (Cont.)

KNOWN: Persons 104 (6.3%)

SUB CATEGORY: Government 30 (1.8%)
EXAMPLE: Is Henry Cabot Lodge now the Ambassador of Argentina? If not, what office does he hold?

SUB CATEGORY: Names in news (not govt., prof., or religious) 21 (1.3%)
EXAMPLE: I need biographical information about Art Buchwald.

SUB CATEGORY: Professionals 28 (1.7%)
EXAMPLE: Do you have biographical information on Dr. Evan Shute, a Canadian doctor who has done work with Vitamin E?

SUB CATEGORY: Religious 6 (.4%)
EXAMPLE: Please find some biographical information on Alexander Campbell, founder of the Disciples of Christ.

SUB CATEGORY: Other 19 (1.1%)
EXAMPLE: What are the birthdates of Spencer T. Olin and Ann W. Olin and how are they related to John M. Olin?

KNOWN: Places 51 (3.1%)

SUB CATEGORY: United States 31 (1.9%)
EXAMPLE: Why is Connecticut called the "Nutmeg State" and the "Constitution State?"

SUB CATEGORY: Non-United States 20 (1.2%)
EXAMPLE: What is the botanical name and description of the national flower of Germany?

KNOWN: Terms/Subjects 475 (28.6%)

SUB CATEGORY: Anthropology/archaeology 9 (.5%)
EXAMPLE: What and when was the Cretaceous period?

SUB CATEGORY: Arts/Crafts 38 (2.3%)
EXAMPLE: Do you have any information on braiding or spinning horse hair for making ropes?

SUB CATEGORY: Business 15 (.9%)
EXAMPLE: I would like some information on the history and process of carpet manufacturing.

SUB CATEGORY: Education 11 (.7%)
EXAMPLE: I need a brief explanation of the Montessori method of teaching.

GENERAL INFORMATION (Cont.)

KNOWN: Terms/subjects

SUB CATEGORY: Equipment 18 (1.1%)
EXAMPLE: Do you have some information on aircraft maintenance?

SUB CATEGORY: Etiquette 19 (1.1%)
EXAMPLE: How do you address a social invitation to our city mayor who is a woman?

SUB CATEGORY: Geography/Travel 10 (.6%)
EXAMPLE: What is the source of the Mississippi River?

SUB CATEGORY: History 63 (3.8%)
EXAMPLE: Which of the two flags used by the Confederate forces in the Civil War was used for battle?

SUB CATEGORY: Home crafts 32 (1.9%)
EXAMPLE: Where can I find information and ideas on using old barnwood for decorating and remodeling my house?

SUB CATEGORY: Law 51 (3.1%)
EXAMPLE: What were the Buckley Amendment and the Family Privacy Act?

SUB CATEGORY: Literature/language 34 (2.0%)
EXAMPLE: What is romanticism in literature and what are it's elements?

SUB CATEGORY: Medicine 24 (1.4%)
EXAMPLE: What is the correct way to bandage weak ankles to help strengthen them?

SUB CATEGORY: Music 7 (.4%)
EXAMPLE: What is the meaning of double exposition as it applies to Mozart's piano Concerto in C minor?

SUB CATEGORY: Natural Sciences 39 (2.4%)
EXAMPLE: What is the life expectancy of the Galapagos turtle?

SUB CATEGORY: Occupation 22 (1.3%)
EXAMPLE: What is the number of years of schooling required to become a general practitioner, a researcher, and a specialist?

SUB CATEGORY: Physical Sciences 28 (1.7%)
EXAMPLE: I need an explanation of an electric arc.

SUB CATEGORY: Social Sciences 24 (1.4%)
EXAMPLE: I need material on the rehabilitation of former P.O.W.'s from the Vietnamese war.

GENERAL INFORMATION (Cont.)

KNOWN: Terms/subjects

SUB CATEGORY: Sports 12 (.7%)
EXAMPLE: Do you have any information on the rules and regulations of how to play rugby?

SUB CATEGORY: Other 19 (1.1%)
EXAMPLE: I would like some information on organizing a church library.

ILLUSTRATIONS 65 (3.9%)

KNOWN: Persons 6 (.4%)
EXAMPLE: Please find a picture of Susannah Wesley.

KNOWN: Places 13 (.8%)
EXAMPLE: I need a picture of the memorial of the place where J.F. Kennedy was assassinated.

KNOWN: Terms/subjects 46 (2.8%)

SUB CATEGORY: Biology 11 (.7%)
EXAMPLE: I need color pictures of mushrooms.

SUB CATEGORY: Equipment 9 (.5%)
EXAMPLE: I need the wiring diagram for windshield wipers on a 1974 Olds Cutlass.

SUB CATEGORY: Fashion/Clothes 10 (.6%)
EXAMPLE: I need a picture of the protective clothing worn by ice-hockey players.

SUB CATEGORY: Other 16 (1.0%)
EXAMPLE: How many stars were in the 1883 U.S. flag and how were they arranged?

ORGANIZATIONS 60 (3.6%)

KNOWN: Terms/subjects 60 (3.6%)

SUB CATEGORY: Business/trade 35 (2.1%)
EXAMPLE: What companies manufacture windmill generators in Australia, Holland, and Sweden?

SUB CATEGORY: Education 12 (.7%)
EXAMPLE: Could you give me the names and addresses of art institutes in Ohio?

ORGANIZATIONS (Cont.)

KNOWN: Terms/subjects

SUB CATEGORY: Government 13 (.8%)
EXAMPLE: Is there a list of state and federal agencies dealing with air and water pollution control?

PERSONS 77 (4.6%)

KNOWN: Events 4 (.2%)
EXAMPLE: Who were the lawyers in the Scopes Trial?

KNOWN: Illustrations 2 (.1%)
EXAMPLE: Who painted the "Signing of the Declaration of Independence" which appears on the back of the new two dollar bill?

KNOWN: Organizations 34 (2.0%)

SUB CATEGORY: Business/services 13 (.8%)
EXAMPLE: What is the name of the president of Lensol Fabrics Co., in Los Angeles?

SUB CATEGORY: Government 21 (1.3%)
EXAMPLE: Who are the members of the task force to study questionable corporate payments abroad?

KNOWN: Persons 8 (.5%)
EXAMPLE: Who was Secretary of State when Sumner Welles was his assistant?

KNOWN: Places 13 (.8%)
EXAMPLE: Who is the governor of Alaska?

KNOWN: Terms/subjects 11 (.7%)
EXAMPLE: Who invented the first adding machine in 1642?

KNOWN: Titles of publications 5 (.3%)
EXAMPLE: Who played the Cowardly Lion in "The Wizard of Oz?"

PROPERTIES 50 (3.0%)

KNOWN: Places 17 (1.0%)
EXAMPLE: Where are the highest and lowest elevations in San Antonio, Texas?

PROPERTIES (Cont.)

KNOWN: Terms/subjects 33 (2.0%)

SUB CATEGORY: Conversion from one unit of measure to another 8 (.5%)
EXAMPLE: How many square feet are in an acre?

SUB CATEGORY: Food Values 5 (.3%)
EXAMPLE: How many calories are in an apple?

SUB CATEGORY: Monetary Values 5 (.3%)
EXAMPLE: What is the rate of exchange of Italian lira to U.S. dollars?

SUB CATEGORY: Sports 7 (.4%)
EXAMPLE: In professional boxing, what are the weight limits for the bantamweight, welterweight, and middleweight divisions?

SUB CATEGORY: Other 8 (.5%)
EXAMPLE: How tall is a full-grown Clydesdale horse and how much does he weigh?

STATISTICS 91 (5.5%)

KNOWN: Organizations 13 (.8%)
EXAMPLE: What was the selling price of General Motor's stock on February 1 and August 1, 1975?

KNOWN: Persons 3 (.2%)
EXAMPLE: What was Ty Cobb's lifetime batting average?

KNOWN: Places 35 (2.1%)

SUB CATEGORY: Population 21 (1.3%)
EXAMPLE: What is the number of persons in the U.S. over 65 according to the 1970 census?

SUB CATEGORY: Other 14 (.8%)
EXAMPLE: What is the seating capacity of the stadium used by the Minnesota Twins for home games?

KNOWN: Terms/subjects 40 (2.4%)

SUB CATEGORY: Business 15 (.9%)
EXAMPLE: What percentage of the housing industry in the U.S. is mobile homes?

STATISTICS (Cont.)

KNOWN: Terms/subjects

SUB CATEGORY: Natural Sciences 8 (.5%)
EXAMPLE: How many wild whooping cranes are in the U.S. not in captivity?

SUB CATEGORY: Population 10 (.6%)
EXAMPLE: What is the number of women studying to become lawyers and medical doctors in the U.S.?

SUB CATEGORY: Other 7 (.4%)
EXAMPLE: Who is older: Goofy or Mickey Mouse?

VERIFICATION OF PUBLICATIONS 41 (2.5%)

PARTIAL CITATION WANTED 26 (1.6%)
EXAMPLE: What was the exact date of publication of Open at Your Own Risk?

FULL CITATION WANTED 15 (.9%)
EXAMPLE: Is there a newer edition of the book Your Investments edited by L. Barnes. (American Research Council). Patron has 1969 edition.

WORDS, PHRASES OR DEFINITIONS 151 (9.1%)

KNOWN: Terms/subjects 151 (9.1%)

SUB CATEGORY: Etymology 9 (.5%)
EXAMPLE: What is the meaning and origin of the name "Matthew"?

SUB CATEGORY: Grammar 7 (.4%)
EXAMPLE: What is the correct possessive form for "each other."

SUB CATEGORY: Identification of word, phrase, or abbreviation 23 (1.4
EXAMPLE: What is the word for fear of heights?

SUB CATEGORY: Spelling/Definition/Pronunciation 92 (5.5%)
EXAMPLE: What is the meaning of radioimmunoassay?

SUB CATEGORY: Translation 20 (1.2%)
EXAMPLE: Can you translate this French sentence--On vous communriquera votre logement au mois Septembre?

APPENDICES

A. Initial letter to 64 public libraries

B. Form for recording reference queries

C. List of 27 participating libraries

APPENDIX A

School of Library Science
The Florida State University
Tallahassee, Florida 32306

February 20, 1976

Dear Colleague:

We are presently working on a U. S. Office of Education sponsored study of the reference process. One objective of this study is to get a better understanding of how reference work is performed. Our hope is that the results of this work will be applicable both to the teaching and the evaluation of reference work. Thus far, we have developed and started testing a model of the reference process illustrated in the attached decision flowchart. We are now ready to test this model with reference queries actually answered in medium size public libraries. We have selected medium size public libraries as our sample in view of their long standing dedication to reference work and the wide range of queries which they answer.

We hope to enlist your cooperation in this work and have made our request as modest as possible since we are fully aware that your time for such an activity is very limited. Specifically, what we would like from you and other public libraries in our sample is a record of the first 60 to 75 queries other than directional (location of fully identified item) queries answered during a week. The minimum amount of information needed for our study is the statement of the query as answered, recorded on a form such as the attached sample. If possible, we would also like to have a statement of the query as originally received (if the query had to be negotiated) and the answer and/or bibliographic citation supplied.

If you are able to assist us in this research project, please return the enclosed postcard and we will send you 75 forms and a return envelope. As a token of our appreciation for your cooperation we will send you an analysis of all the queries collected in the study.

Thank you for your consideration of this request.

Sincerely,

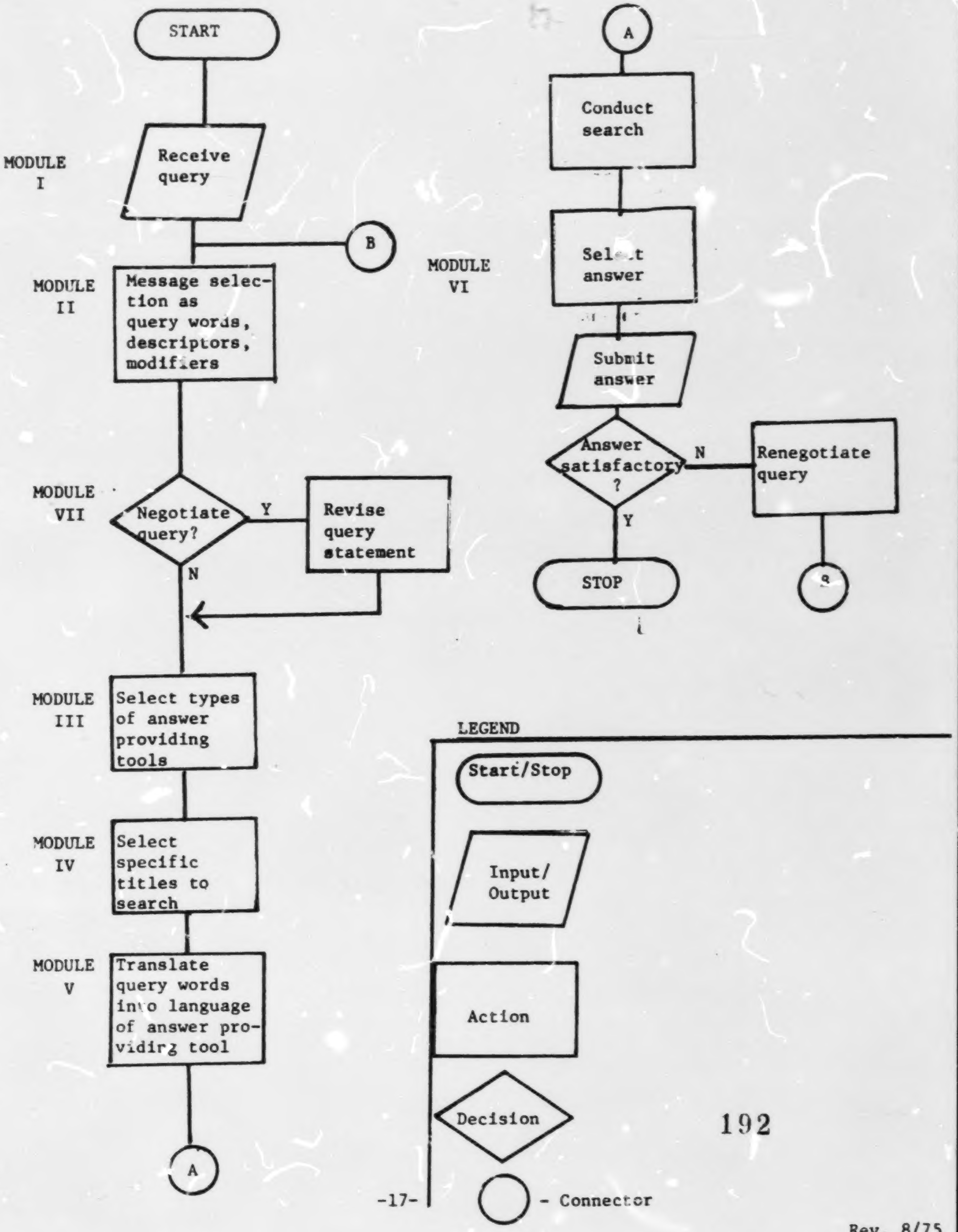
Gerald Jahoda

Gerald Jahoda
Professor

GJ/dh
Enclosures: Flowchart
Record of Reference Query
Postcard

MODEL OF REFERENCE PROCESS

Figure 1


START
MODULE I
Receive query
B
MODULE II
Message selection as query words, descriptors, modifiers
MODULE VII
Negotiate query?
Y
Revise query statement
N
MODULE III
Select types of answer providing tools
MODULE IV
Select specific titles to search
MODULE V
Translate query words into language of answer providing tool
A
A
Conduct search
MODULE VI
Select answer
Submit answer
Answer satisfactory ?
N
Renegotiate query
Y
STOP
B
LEGEND
Start/Stop
Input/ Output
Action
Decision
- Connector

192

APPENDIX B

RECORD OF REFERENCE QUERY

1. STATEMENT OF QUERY AS ACTUALLY ANSWERED____

2. STATEMENT OF QUERY AS ORIGINALLY RECEIVED_______________________________________

3. ANSWER AND/OR CITATION SUPPLIED____

APPENDIX C

LIBRARIES PARTICIPATING IN THE SURVEY

Ventura County & City Library
Ventura, Cal.

Silas Bronson Public Library
Waterbury, Conn.

Central Florida Regional Library
Headquarters
Ocala Public Library
Ocala, Fla.

Orlando Public Library
Orlando, Fla.

Dalton Regional Library
Dalton, Ga.

Hammond Public Library
Hammond, Ind.

Jefferson Parish Library
Metarie, La.

Shreve Memorial Library
Shreveport, La.

Saint Clair County Library System
Port Huron, Mich.

Warren Public Library, Miller Branch
Warren, Mich.

Kansas City Public Library
Kansas City, Mo.

Clark County Library District
Las Vegas, Nev.

James Prendergast Library Association
Jamestown, N.Y.

Rochester Public Library
Rochester, N.Y.

Akron-Summit County Public Library
Akron, Ohio

Stark County District Library
Canton, Ohio

Elyria Public Library
Elyria, Ohio

Mansfield Public Library
Mansfield, Ohio

Jackson County Library System
Medford, Ore.

Erie Metropolitan Library
Erie, Penna.

Scranton Public Library
Scranton, Penna.

Spartanburg County Public Library
Spartanburg, So. Car.

Knoxville-Knox County Public Library
Knoxville, Tenn.

Beaumont Public Library
Beaumont, Tex.

El Paso Public Library
El Paso Texas

Norfolk Public Library System
Norfolk, Va.

Eau Claire Public Library
Eau Claire, Wisc.

Appendix F

A COMPUTER-SEARCHED AND PRINTED INDEX TO REFERENCE QUERIES

Gerald Jahoda, Afarin Shahravan, and
Sims Kline

School of Library Science
Florida State University
Tallahassee, Florida

August 1976

ABSTRACT

An index to reference queries prepared with the aid of a data management system, the MARS system run on the CDC 6500 is described. The index is either searched on-line or printed by computer and searched manually. The index is intended to be used to select queries to be answered by students in a reference course. Other applications in libraries are suggested.

This study was supported by U.S. Office of Education Grant #OEG-0-75-00619.

search strategy used (lead-in tool, answer-providing tool, search headings used); answer and/or bibliographic citation provided. When the query is indexed, its level of difficulty, the relationship between words in the query statement and the subject heading searched, and other aspects of the query given in Figure 1, List of Access Points, are also indicated.

Figure 1

TYPES OF ACCESS POINTS USED IN INDEX

1. Accession number of query
2. Source of query
3. to 5. Subject of query, indexed as:
    - Wanted descriptor
    - Known descriptor
    - Modifier
6. Negotiated queries
7. Reasons for query negotiation
8. Types of answer-providing tools options
9. Type of answer-providing tool actually used
10. Lead-in tool used
11. Relationship between words in query statement and subject heading used
12. Type of answer provided
13. Level of difficulty of query

Before describing the preparation of the index to the queries, we need to point out that the "index package" consists of three parts: the list of queries, the index, and the answers to the queries. Only the index itself is in machine-readable form. Figure 2 illustrates the three parts of a record of a single query, the query, the index to the query, and the record of answer.

A COMPUTER-SEARCHED AND PRINTED INDEX
TO REFERENCE QUERIES

This paper describes a computer-searched and computer-printed index to reference queries. The index is prepared with the aid of a data management system. Data management systems, defined by Cagan, are software systems that permit file generation, maintenance, and reporting in a generalized fashion. Data management systems are generalized programs in that they can produce a multiplicity of file types and formats as well as a multiplicity of reports (1). Data management systems are used extensively in business and industry for the preparation of sales, inventory, personnel, and other records. An advantage of such a system is that its user does not have to know computer programming. Two recent articles by Collins suggest the application of data management systems for the preparation of housekeeping records in small and medium size libraries (2,3).

The specific data management system used for preparing the index to reference queries is the MARS (Multiple Access Retrieval System), run on the CDC 6500 computer. The record prepared by MARS can either be printed in any desired arrangement or searched on-line by a single access point or any logical combination of access points. Detailed instructions for preparing, updating, searching, and printing a MARS file are given in a manual published by the Control Data Corporation (4).

Description of the Index and its Preparation

The queries now included in the index are either actual queries that were answered in libraries or queries prepared for students in reference courses. For each query, the following record is kept: statement of query as originally received and, when applicable, statement of query as answered;

Figure 2

RECORD OF SAMPLE QUERY INCLUDED IN INDEX

The query:

What gauge track does the Valdosta Southern Railroad use?

Index in machine-readable form:

ACCNUM=00006	Accession number 00006
SOURCE=1	Source of query (made up)
WANT=4B KNOW=16 MODIF=22	Subject indexed in terms of wanted descriptor, known descriptor and modifier
NEGOT= REASNEG=	Negotiated query and reason for negotiation (does not apply)
ATPMAT=E,N ATPACT=N	Type of answer-providing tool that might be used and type of answer-providing tool actually used (E=encyclopedia, N=directory other than biographic)
LEAD=1	Type of lead-in tool (1=card catalog)
SUBH=2	Query words and subject heading relationship (2=exact match)
ANST=1	Type of answer provided (1=a number or numbers)
LEVEL=2	Level of difficulty (2=average)

Answer to query and search strategy:

00006

Lead-in tool:	subject card catalog
Access point in lead-in tool:	Railroads-Yearbooks
Answer-providing tool:	*Jane's World Railways* 1971/72, p. 320
Access point in answer-providing tool:	Valdosta Southern Railroad
Answer:	4 feet, 8 1/2 inches

The access points may also be printed by columns rather than rows for ease of scanning.

The preparation of the index in machine-readable form, the MARS file, entailed the following steps:

1. Code design
2. Assignment of accession number to each query
3. Coding of queries
4. Keypunching of queries
5. Creation of MARS file

Two of these steps require further explanation. Code design consists of specifying the location, length and type of code for each type of access point. The creation of the MARS file consists of entering the punched cards on disc and the preparation and execution of a command file that converts the punched card images into MARS searchable form. The command file consists of about 30 statements and is prepared as well as executed at a terminal. The resulting MARS file is searched on-line by single access point or by any logical combination of access points. The search result may range from an accession number for a single query to every access point for every query included in the index. The latter search result is the manually searched index.

Time and Cost Estimate for Preparing MARS File

The following time and cost estimates are only for the preparation of the MARS file and do not include the intellectual aspects of indexing. About five hours were spent in code design and four hours in the preparation and execution of the MARS command file. The coding of the access points of a query and recording the codes on a work sheet took about two minutes per query. Keypunching and verifying took another two minutes per query.

The on-line printing of the index to 188 records varies with the number of terminal users at the time of using the file and the speed of the terminal.

On the average, it takes about 30 minutes with a 10 characters-per-second teletypewriter. The computer cost is difficult to estimate because of the variety of charges entailed. The preparation of the MARS file and the printing of the index to 188 records was estimated by our Computer Center personnel to be less than forty dollars. This figure is based on a rate structure in an academic institution and may be considerably higher in other types of organizations or, for that matter, in different universities.

Discussion

There are several ways in which an index to reference queries may be used. We prepared the index as an aid in selecting reference queries for students in reference courses. Practice in answering reference queries is (or at least should be, in our view) a key component of a reference course. A prime objective of reference courses is to prepare students to answer reference queries. This can best be done by giving students practice in this task. The index to reference queries enables the instructor to select the types of reference queries needed at a particular stage of the student's training. Thus queries can be selected by level of difficulty, by type of answer-providing tool, by need to negotiate, or by any other factor or combination of factors that are access points in the index. Since the collection of reference queries is a time consuming and continuing task (reference books open to the page with the answer if the same queries are used too many times), it is suggested that teachers of reference might develop a query bank on a cooperative basis. We might thus share each other's efforts, just as students are sometimes prone to do.

Indexes to reference queries have been prepared by reference librarians for at least two purpose: to save time in answering repeat queries and to provide data for the evaluation of reference service. A record of types of queries answered as well as not answered, types of reference tools used, and other aspects of reference service assists library management in the evaluation of reference service. The use of a data management system such as the one described is suggested as a mechanism for preparing an index to reference queries in libraries.

REFERENCES

1. Carl Cagan, Data Management Systems, Wiley-Hamilton, 1973, p. 2.
2. K.A. Collins, "Data management systems. Part I. A model approach to automating small library files," Special Libraries 66:121-25 (March 1975).
3. K.A. Collins and W.W. West, "Data management systems. Part II. Journal routing - an example of library applications," Special Libraries 66:205-11 (April 1975).
4. Control Data Corporation, Multi-Access Retrieval System (MARS VI) for Partial Inversion, Reference manual Version 2.1, Minneapolis, Minn., Control Data Corp., 1974.

Appendix G

BIBLIOGRAPHIC VERIFICATION OF MONOGRAPHS

O. L. Shiflett

May, 1976

School of Library Science
Florida State University

BIBLIOGRAPHIC VERIFICATION OF MONOGRAPHS

O. L. Shiflett
May, 1976

Introduction

In the broadest sense, all work of libraries can be considered as bibliographic activity. A patron inquiring about any topic does not ask what the librarian knows about it, but where in the collections of the library will the necessary information be found. Librarians are not expected to be able to answer a request for the number of eggs produced in Montanta in 1967 from their own knowledge, but are legitimately expected to locate that information in a particular source.

However, while an information request is in essence a bibliographical request, the definition and specification of knowns and wanteds make it in a real sense distinguishable from a request for a bibliographical entity. The types of knowns and wanteds with which this flow chart is concerned are those that apply to the distinction of a unique bibliographical item.

A bibliographic query as defined here is basically a request for more information about a bibliographic unit based on some information already available about the item. The query seeks to identify the item as a unique entity The process of verification involves ascertaining the correctness and completeness of the original citation through the use of some authoritative bibliographical tool. Whether it is for acquisitions, inter-library loan, cataloging, or the attempt to refine a footnote, the basic process is the same and allows of codification.

The object in bibliographic verification is to standarize the terminology used in describing a particular publication. It is a process of making certain that everyone is calling the same object by the same name. Since there are a number of standard bibliographic tools used in verification that are compiled by different processes for different purposes, there naturally exists a hierarchy of authoritativeness. The National Union Catalog, (NUC) with the Library of Congress Catalog and the various other forms that this basic tool can assume such as the OCLC data base, is the primary tool of bibliographic verification in the United States. While it may on occasion be in error in its descriptions, the errors themselves become sanctified through the widespread use of the NUC and the widespread acceptance of its authoritativeness. The Cumulative Book Index is probably the second most reliable source for books published in English. The entries used are most frequently complete and in agreement with those [illegible] the NUC. Books in Print and Forthcoming Books are, like the publishers' catalogs used in this chart, trade tools and, while useful, are not bound to adhere to the Anglo-American Cataloging Rules. As the accompanying flow chart indicates, they are of secondary importance to verification in the NUC.

The form of the least search strategy developed here derives from the hierarchy of authoritativeness of the tools utilized and the possibilities of success in any given tool. As can be observed in the flow chart below, the progression of bibliographic sources utilized for verification of American imprints in American libraries is straightforward. The basic approach is:

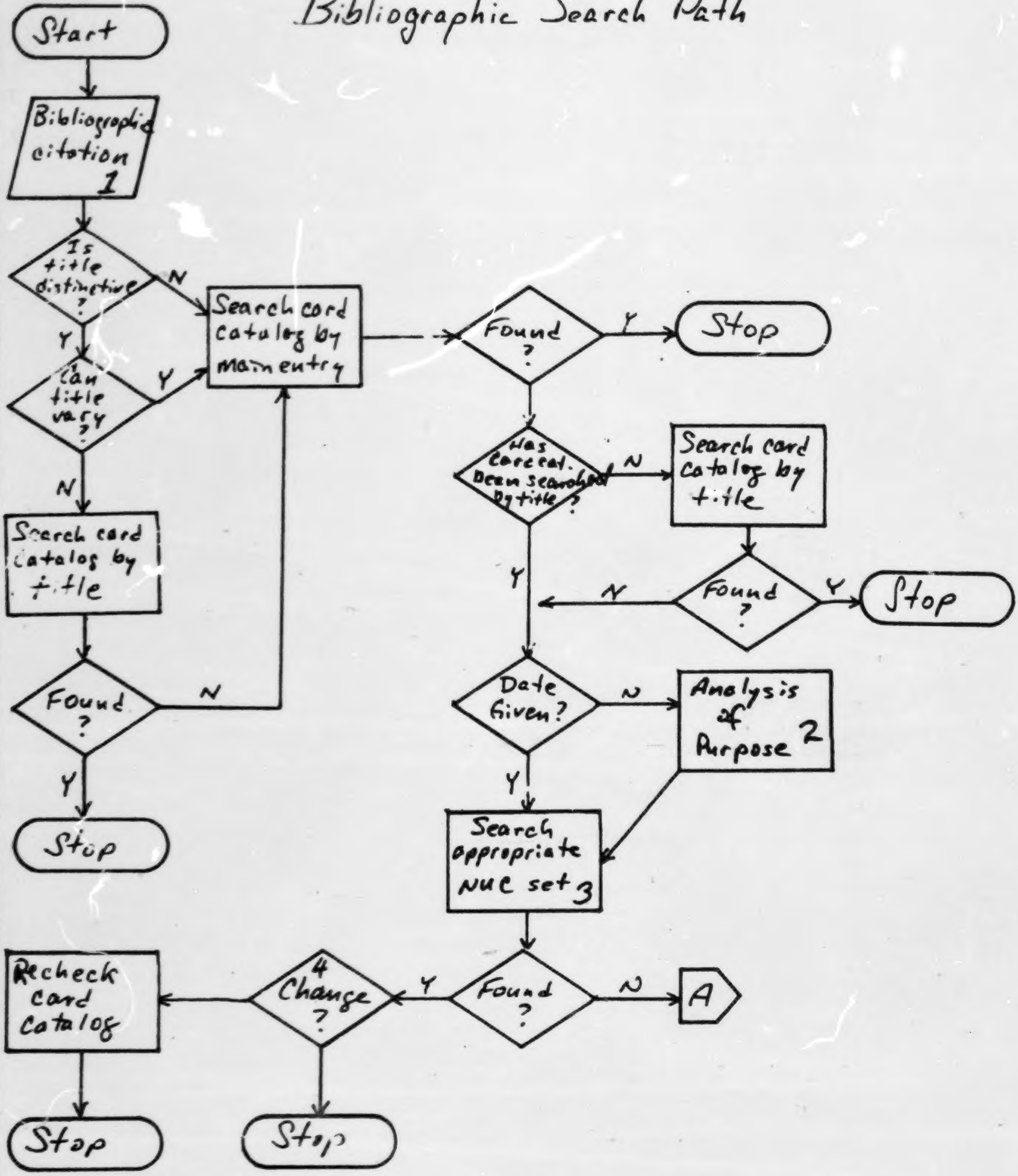
1. Search Card Catalog
2. Search the National Union Catalog
3. Search the Cumulative Book Index
4. Search Books in Print
5. Search Forthcoming Books
6. Search Publishers' Catalogs

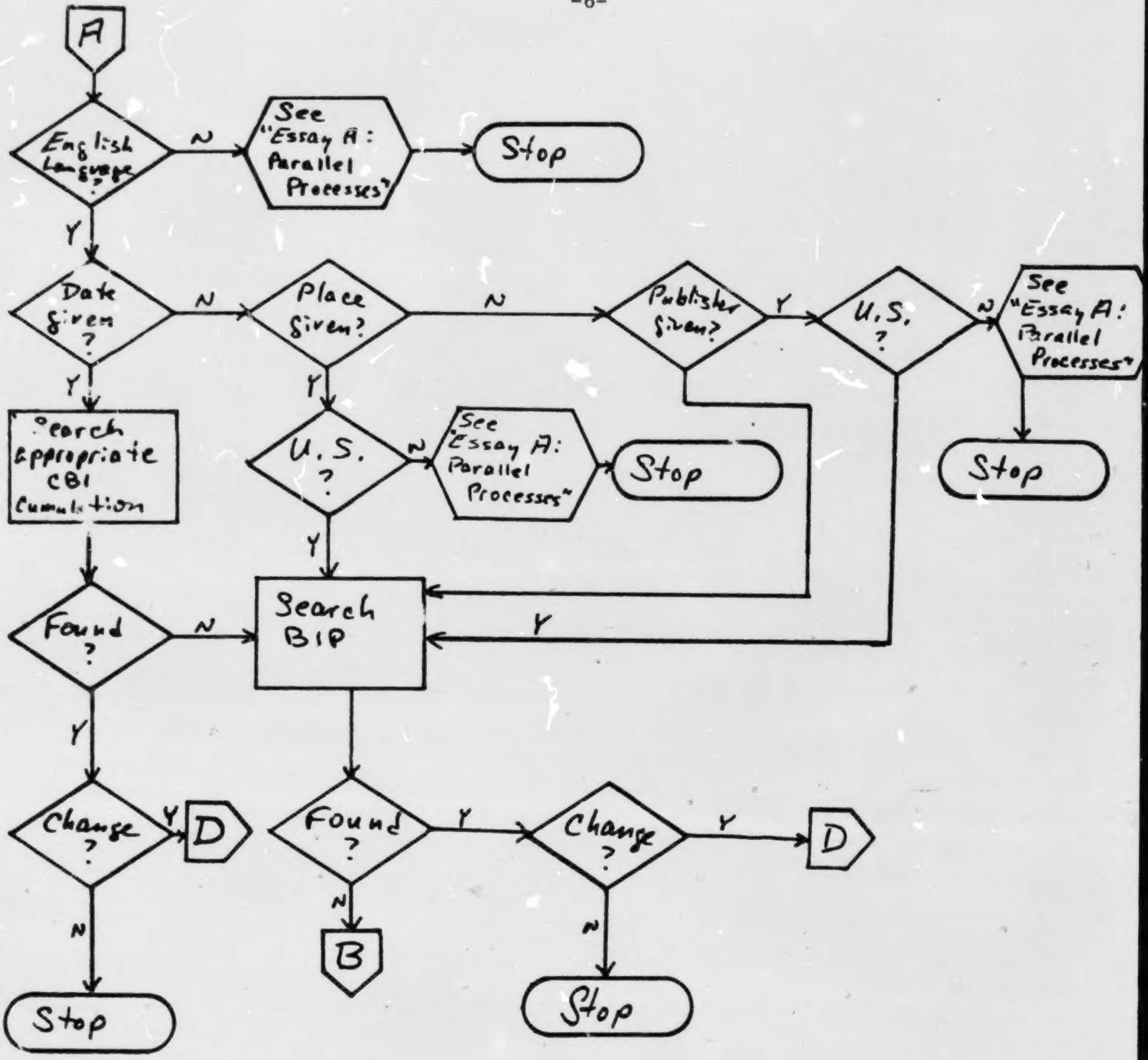
Recurring patterns develop when information gleaned from a tool of lesser authoritativeness necessitates a return to an earlier point in the hierarchy.

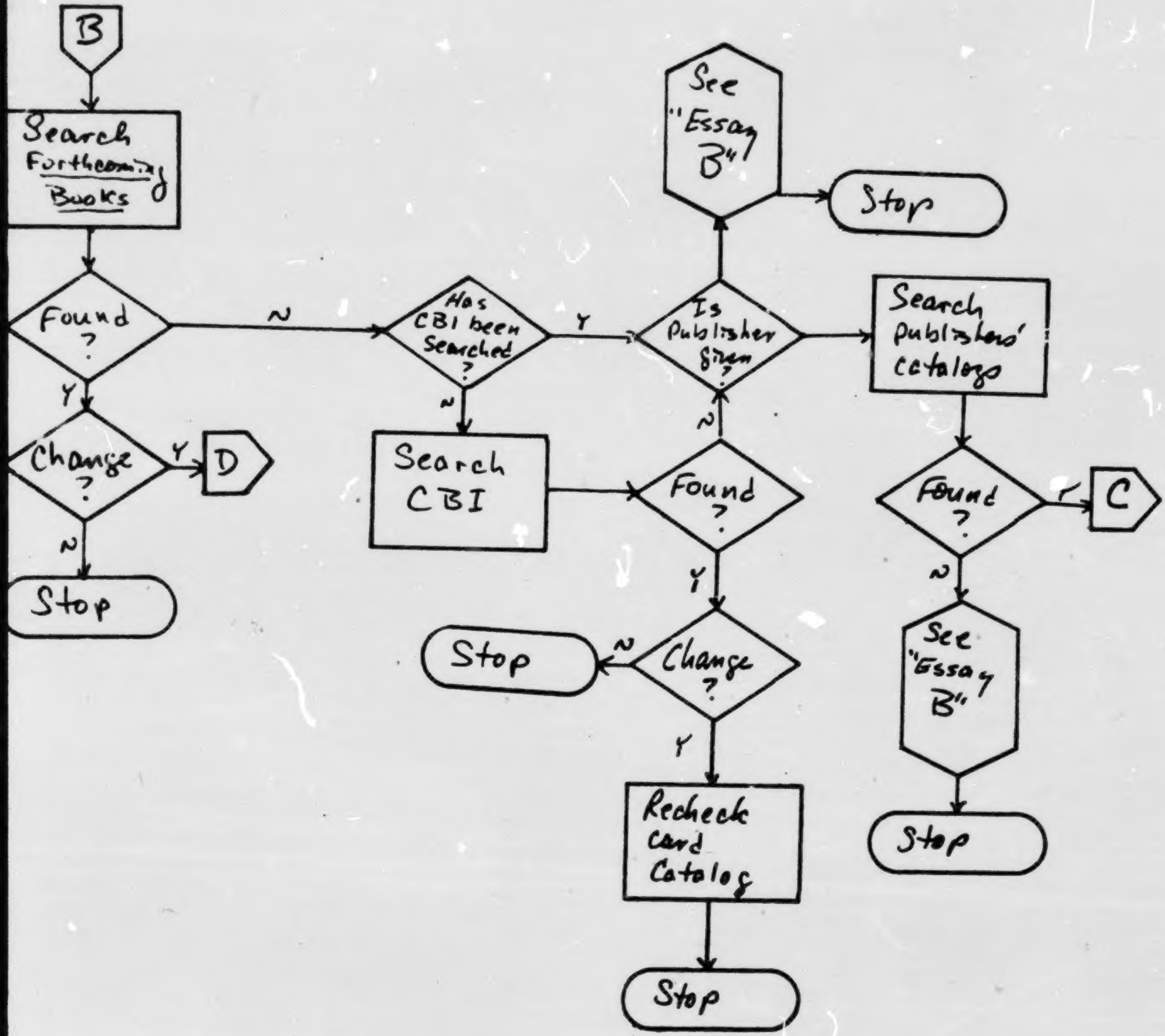
The access points by which these tools should be searched will vary from tool to tool and from search to search. Research has indicated that the title of the bibliographic unit is more frequently correct or at least a stronger positive clue than the main entry given in most bibliographic queries. For this reason, it is frequently best to search all tools by which access is possible by title, by the title given in the bibliographic query except when the title is not distinctive or there is a good chance that the title may vary from edition to edition such as in the Complete Works of Fielding or The Adventures of Tom Sawyer by Mark Twain. This, of course, is not a hard and fast rule, but more a principle that should be in mind while searching. Such requests as James Trager's The Bellybook (actual title: The Big, Fertile, Rumbling, Cast-iron, Growling, Aching, Unbuttoned Bellybook) have appeared too frequently to design laws around. In general it is best to search whatever tool is being used by title when possible--but be prepared for frustration. As the searcher gains more familiarity with the publishing industry and the book trade, he will learn which publishers and which types of publications should be readily verifiable and which may not be and be able to modify his search accordingly. For an expanded idea of the types of difficulties that may be encountered, consult Chapter IV of George Lowy's A Searcher's Manual (Metuchen, NJ: Shoestring Press, 1966).

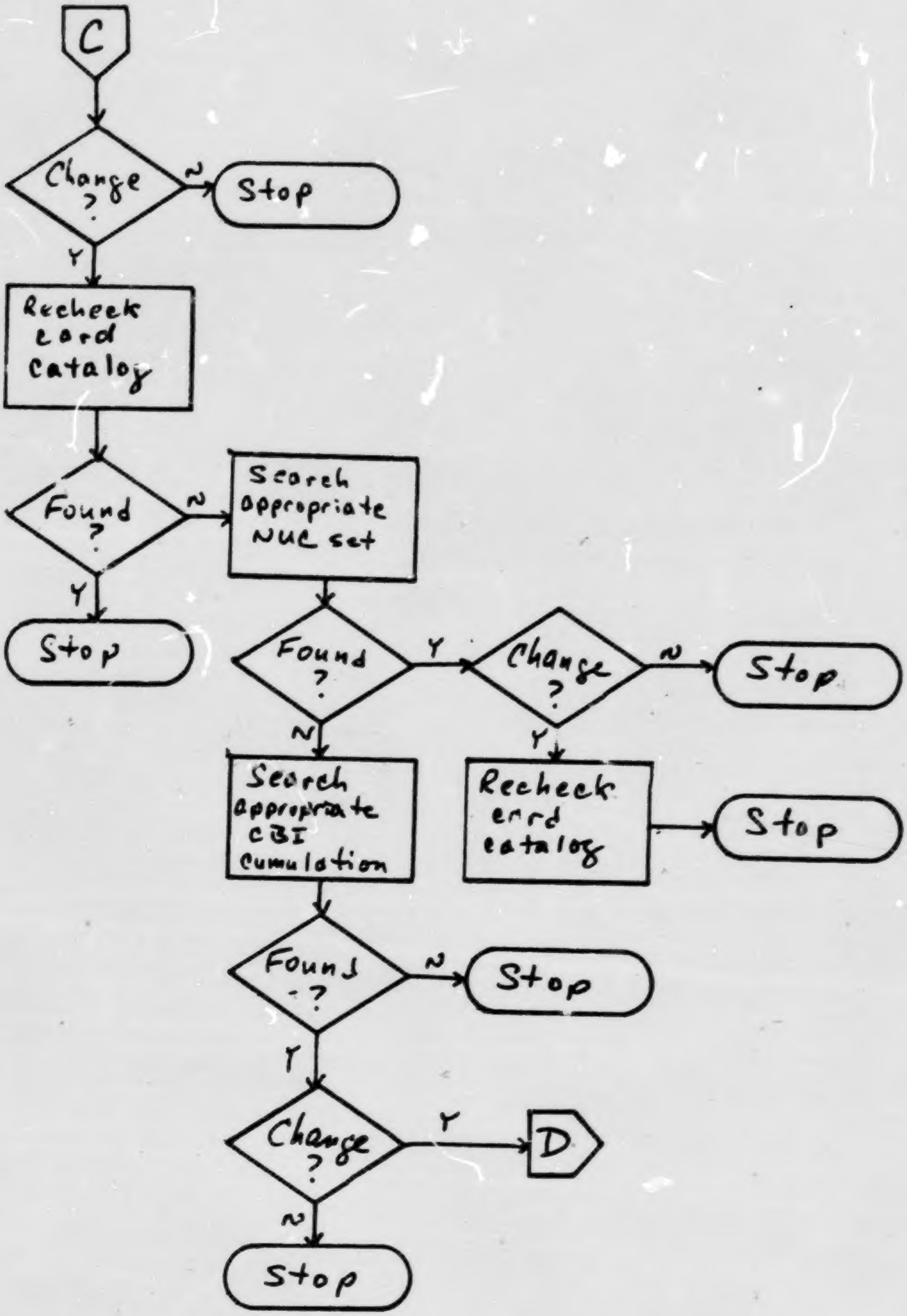
The accompanying flow chart presents the process of bibliographic verification of monographic material. The arrangement is one that should provide a least search path for the verification of English language items published in the United States. The "Parallel Processes" notations refer to substitutions (see below) that can be made in the tools to modify the procedure for British, French, and German items. Certain recurring patterns such as rechecking the card catalog before attempting to verify in the NUC after an item has been found in BIP or CBI presume that the library is large enough to have many of the items that may be commonly requested through inter-library loan or acquisitions. These patterns would have to be modified for use in smaller libraries where the probabilities are not so great.

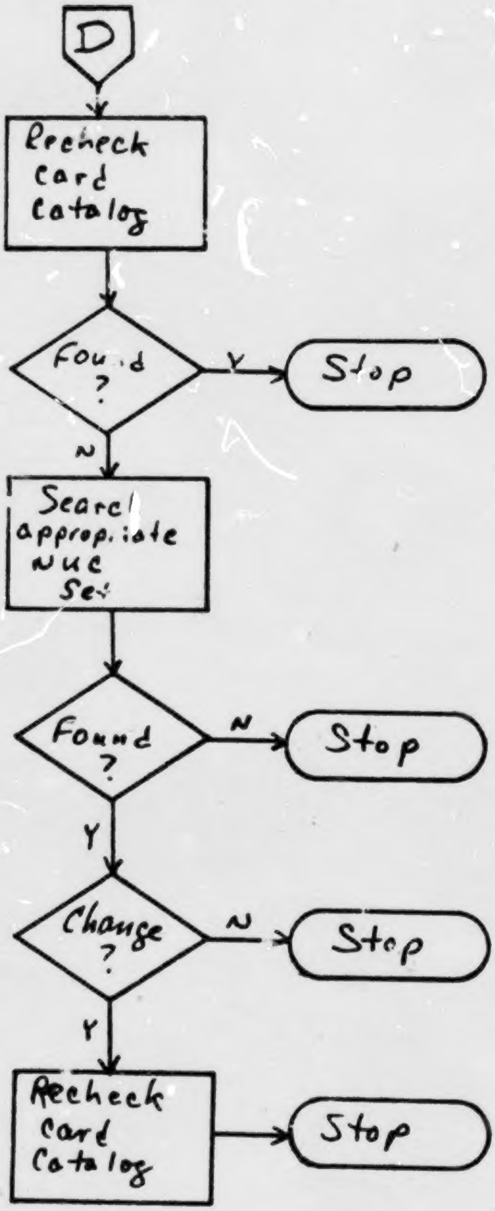
Bibliographic Search Path


Start
Bibliographic citation 1
Is title distinctive ?
N
Y
Can title vary ?
Y
N
Search card catalog by main entry
Found ?
Y
Stop
Has card cat. been searched by title ?
N
Search card catalog by title
Found ?
Y
Stop
N
Y
Search card catalog by title
Found ?
N
Y
Stop
Date Given ?
N
Analysis of Purpose 2
Y
Search appropriate NUC set 3
Found ?
N
A
Y
4 Change ?
Recheck card catalog
Stop
Stop


A
English Language?
N
See "Essay A: Parallel Processes"
Stop
Y
Date given?
N
Place given?
N
Publisher given?
Y
U.S.?
N
See "Essay A: Parallel Processes"
Stop
Y
Search appropriate CBI Cumulation
Y
U.S.?
N
See "Essay A: Parallel Processes"
Stop
Y
Found?
N
Search BIP
Y
Y
Change?
Y
D
N
Stop
Found?
Y
Change?
Y
D
N
B
N
Stop


B
Search Forthcoming Books
Found ?
N
Y
Change ?
Y
D
N
Stop
Has CBI been Searched ?
Y
N
Search CBI
Is Publisher given ?
See "Essay B"
Stop
N
Found ?
Y
Change ?
N
Stop
Y
Recheck card Catalog
Stop
Search publishers' catalogs
Found ?
Y
C
N
See "Essay B"
Stop


C
Change ?
N
Stop
Y
Recheck card catalog
Found ?
N
Search appropriate NUC set
Y
Stop
Found ?
Y
Change ?
N
Stop
N
Y
Search appropriate CBI cumulation
Recheck card catalog
Stop
Found ?
N
Stop
Y
Change ?
Y
D
N
Stop


D
Recheck card catalog
Found ?
Y
Stop
N
Search appropriate NUC Set
Found ?
N
Stop
Y
Change ?
N
Stop
Y
Recheck card catalog
Stop

NOTES TO THE FLOW CHART

[1] Bibliographic Citation: A bibliographic citation posed in the form of a verification problem almost invariably contains a main entry and a title that are usable as potential access points. While a main entry may be missing or so obviously garbled as to be unusable as may occur, for example, when a person confuses the name of an interviewer on a book talk program with the name of the author he is interviewing, a title usually must be present. Otherwise the original citation falls into the class of reference queries generally calling for any of several publications an a subject.

[2] Analysis of Purpose: Even though a date of publication has not been given, there are certain assumptions that can be made here that will help guide the search path at this point. If no date of publication has been given in the original citation, conclusions can be drawn from the purpose of the citation. If the searcher is dealing with an acquisitions request heshould assume here that the imprint is a current one and begin his search with the most current cumulations and issues of NUC. Acquisitions requests tend to be generated from current information such as book reviews, publisher's brochures, and advertisements. Inter-library loan requests tend to be generated from such sources as bibliographies, footnotes in books and articles, or allusions in texts, consequently they will tend to be older items and it would be appropriate to begin the search with older cumulations of the NUC.

[3] National Union Catalog (NUC): For the sake of conciseness, a wide range of tools are associated with the heading. For bibliographic verification, the NUC is authoritative in American libraries. The authoritativeness of the NUC rests on the method of its compilation.

It is a listing of the holdings of many libraries. These holdings are described in accordance with the Anglo-American Cataloging Rules. Accordingly, this heading shall include any ofaa wide range of sources that partake of the degree of authoritativeness. These include the Library of Congress Catalog, the Library of Congress proof-slip service, the microfilm services produced by several private companies, and the new computerized services such as OCLC and SOLINET that are used in the processes of bibliographic verification and cataloging.

4 Change: At various points in the flow chart bibliographic verification occurs when an item is found in the various tools utilized. Frequently, the original citation will not agree with the information found in the tool. A significant change in the bibliographic information will necessitate rechecking the card catalog to be sure the item is not already in the local library's collection. A significant change can be defined in most cases as a change in either the main entry or the title such that is would have caused the searcher to have looked in the wrong place in the filing scheme of the card catalog in earlier searches. In some cases when the edition of the book is of critical concern, a change in the imprint or date may be considered a significant change.

Essay A: Parallel Processes

The tools used in this flow chart are for the most part directed toward English language, United States imprints. For many foreign publications, the tools are comparable and all that is necessary it simple substitution of the foreign tool for its American equivalent. In some cases, the substitution will not be perfect, but the areas of coverage of the American tools have roughly corresponding foreign tools.

The only source that cannot be readily substituted is the *National Union Catalog* since it is the authority tool and universal in its coverage. The corresponding bibliographies and national library catalogs must be used in conjunction with the *National Union Catalog*. Some of the more common substitution patterns that will be encountered are listed below. Consult Winchell for more detailed information about the various foreign sources.

United Kingdom

Books in Print: use *British Books in Print*

Cumulative Book Index: use the *British National Bibliography* [CBI covers all English language books and should be used in conjunction with BNB]

Forthcoming Books: use *Whitaker's Books of the Month and Books to Come*.

National Union Catalog: use the *British Museum Catalog* in conjunction with the NUC.

France

Books in Print: use *Repertoire des Livres de Langue Française Disponibles* or *Le Catalogue de l'edition Française*

Cumulative Book Index: use *Les Livres De L'Annee-Biblio*

Forthcoming Books: use *Les Livres Du Mois* [this is not a perfect substitution, but provides the most current data for French publications]

National Union Catalog: use the catalog of the Bibliotheque Nationale in conjunction with the NUC.

German

Books in Print: use Verzeichnis Lieferbarer Bücher

Cumulative Book Index: use Deutsche Bibliographie and Deutsche Nationalbibliographie

Forthcoming Books: There is no perfect substitutions but the most current issue of Deutsche Bibliographie and Deutsche Nationalbibliographie furnish the most current readily available data for German publications.

National Union Catalog: see Winchell for the wide range of retrospective bibliographic tools that can be used in conjunction with the NUC.

Essay B

The only distinction between the two points that lead to this essay is that a publisher is given in the original citation in one and not in the other. In both cases, the date of publication and place of publication may or may not be included and verification has not been attained.

Assuming the searcher has been methodical and alert, by the time this point is reached, the great majority of American imprints should be verified. Here, the possibilities of using the flow chart to clarify the process of bibliographic verification begins to become too cumbersome to be useful. While it is theoretically possible to continue because there are a finite number of bibliographic tools and a finite number of bibliographic elements, the diversity of alternatives that it would be necessary to explore render this approach unsuitable for an introduction to verification.

The process of devising a flow chart such as this rests on the assumption that the bibliographic tools used are precise and comprehensive in their coverage. This, unfortunately, is not the case. While CBI does attempt to include all books of importance in the English language, the distinctions between significant and ephemeral is often hazy enough to cause confusion and the searcher frequently has no idea of whether the item needing verification is a scholarly treatise or a nine page mimeographed pamphlet. While titles may indicate the subject of the item, they usually cannot disclose the depth and quality of treatment. Further, a number of publishers for a variety of reasons ranging from apathy in the case of small presses issuing only limited editions of literary works to display their virtuosity in printing to larger commerical publishers that have developed patterns of sales and distribution that are outside the main channels of the book trade, chose not to participate in trade bibliographies such as Books in Print or Forthcoming Books.

Aside from the inadequancy of the tools, there are a great variety of reasons why verification has not been completed. The searcher may be dealing with a bibliographic ghost--an item that appears plausible in that it does have an author and a title and perhaps even details of publication, but simply does not exist. These may originate from a variety of sources such as an author's search for a citation as in the case of the Necronomicron or the attempts of a bibliographer like Charles Evans to accomplish more than is possible.

In most cases, however, the searcher will reach this point through incomplete or inaccurate information that has misled him to the extent that the previous search has been substantially invalidated. At an early point in the charted search, an assumption was made that if no publisher or place of publication were given the item was to be treated as though it were an American imprint. If the item being searched at this point is one of these, this assumption should be re-evaluated. The number of countries producting publications in English is great and, while any foreign publications in English appear in the standard American tools through American distribution of foreign publications or through American offices of foreign publishers, this is not a universalor even widespread practice. Clues such as the subject of the item, variant spellings of English words, and the form of the authors' name may lead the searcher to the appropriate national bibliography or subject bibliography.

Many searches go astray not because of lack of information, but because of subtle misinformation. A query about a monograph claiming to be published by the University of Minnesota Press may variously be found to be a dissertation completed at the university, a publication of a department of the university, or even a book published by antother press written by a faculty member of the university. The title given in a citation to be verified may actually be the subtitle of the monograph, an abbreviated form of the title found on the spine, a rough translation into English of a foreign title, or even the subject heading under which the requestor found the original citation in a bibliography. Further, the main entry may vary from a simple misspelling of the author's name as "Smith" for "Smyth" through the use of an editor for the main entry for a symposium to the assertion that Sheridan Baker is the author of Fielding's *Tom Jones*.

As noted in the introduction, dates of publication when given are normally a strong positive clue. This, unfortunately, is not always true. The habits of the burgeoning reprint industry have introduced factors into the book trade that severely complicates searching. The insertion of Max Adeler's *Out of the Hurley-Burley; or, Life in an Odd Corner* in *Books in Print* in 1968 with a publication date of 1874 by one reprint publisher when the book was not actually produced until 1973 has been a common occurrence. It is only through a knowledge of the book trade and the vagations of bibliographic form and practice that the searcher will readily come to terms with the process of bibliographic verification.

Several directions for the search suggest themselves at this point. Perhaps the most fruitful of these would be an approach by subject. If the subject of the item can be identified from the title given in the citation, the searcher can recheck the tools already searched through the subject approach. Some cumulations of the NUC, the CBI, BIP, and *Forthcoming Books* all offer this access and it should be used in verification. The card catalog of the local library is probably the best source in which to identify these tools. The bibliographies found may range from highly specialized sources on one author to more comprehensive tools such as *Education Index* of the *MLA Bibliography*. It must be remembered, however, that this approach is limited in that there is a time lag between the publication of an item and its appearance in a bibliography. This time lag will vary from tool to tool and from subject to subject.

In many cases, tools for specific subject areas may not exist in monographic or serial form. Bibliographic Index offers a great degree of precision in identifying the literature of a subject and can be very useful in the verification process.